S.96 P9r

SOCIAL SCIENCES

Public Health Reports

VOLUME 58 OCTOBER 1, 1943 NUMBER 40

IN THIS ISSUE

Tuberculosis Mortality in the United States

CONTENTS

Page

Tuberculosis mortality in the United States: 1939–41. J. Yerushalmy, H. E. Hilleboe, and C. E. Palmer 1457

Prevalence of communicable diseases in the United States, August 15–September 11, 1943 1482

Deaths during week ended September 18, 1943:

Deaths in a group of large cities in the United States 1485

Death claims reported by insurance companies 1485

PREVALENCE OF DISEASE

United States:

Reports from States for week ended September 25, 1943, and comparison with former years 1486

Weekly reports from cities:

City reports for week ended September 11, 1943 1460

Rates, by geographic divisions, for a group of selected cities 1492

Plague infection in California and Montana 1492

Territories and possessions:

Puerto Rico—Influenza 1493

Foreign reports:

Canada—Provinces—Communicable diseases—Week ended August 28, 1943 1494

Cuba—Provinces—Notifiable diseases—4 weeks ended August 14, 1943 1494

Reports of cholera, plague, smallpox, typhus fever, and yellow fever received during the current week—

Cholera 1495

Plague 1495

Smallpox 1495

Typhus fever 1495

* * *

Court decision on public health 1496

Public Health Reports

Vol. 58 • OCTOBER 1, 1943 • *No. 40*

TUBERCULOSIS MORTALITY IN THE UNITED STATES: 1939–41 [1] [2]

By J. YERUSHALMY, *Principal Statistician*, H. E. HILLEBOE, *Senior Surgeon*, and C. E. PALMER, *Surgeon, United States Public Health Service*

The Bureau of the Census has in recent years released more detailed mortality data than in previous years. These data, when correlated with the detailed figures on the composition of the population which became available from the 1940 Census, make possible more comprehensive analyses of tuberculosis mortality than have heretofore been possible. It is the object of this paper to assemble and analyze, for purposes of easy reference, the material on tuberculosis which may be found in recent publications of the Bureau of the Census.

Even a casual review of statistics on tuberculosis reveals the extraordinary progress that has been made in the control of the disease since the beginning of the century. The mortality rate was cut in half during the first 20 years and then halved again by 1940, that is, the 1940 rate was less than one-fourth that at the beginning of the century.

This favorable trend continued through 1941; the rate for that year established an all-time low record. This is all the more encouraging in view of the expanding defense activities in 1941, which imposed great strains on the housing, sanitary, hospital, and medical facilities of many communities. Whether the transition from a period of defense activities to a war economy had an inhibiting effect on the downward trend of tuberculosis mortality cannot now be determined with certainty. Such fragmentary figures as are now available for 1942 indicate that for the country as a whole there has been no serious

[1] From the Tuberculosis Control Section, States Relations Division, and the Division of Public Health Methods, National Institute of Health.

The authors are indebted to Miss Jennie C. Goddard of the National Institute of Health for her assistance in analysis and in assembling the material.

[2] Based on data released by the Bureau of the Census in its annual publications and in Special Reports, as well as on some unpublished material made available by the Division of Vital Statistics of the Bureau of the Census, for which grateful acknowledgment is hereby made.

reversal of the trend. However, preliminary figures for some individual States are not so favorable. Provisional figures for the last quarter of 1942 reported from 35 States to the Public Health Service show only a slight increase when compared with similar figures for 1941. It may, however, be significant that in its analysis of the first 10-percent sample of death certificates (for August through November 1942) the Bureau of the Census states: "Tuberculosis forms a higher proportion of the deaths from all causes in both urban and rural 'critical areas' than in urban and rural 'noncritical areas.' " [3]

Many of the environmental conditions known to be associated with tuberculosis mortality and morbidity are aggravated during a period of national peril. In the previous World War tuberculosis mortality increased sharply in all countries in Europe. In addition the majority of tuberculosis victims are found in the age groups which furnish the greater part of the fighting men and industrial workers. The course of the disease during the war period is therefore of paramount importance.

The long-range aspects of the tuberculosis problem may also be greatly influenced by the course of the disease and by the measures taken for its control during the war period. Already certain factors are operating which will have a profound effect on the future of tuberculosis and its control. Chest X-ray films of millions of people are being taken now by induction stations and in mass surveys in war industries. Through these efforts tens of thousands of tuberculosis cases, primarily in the minimal stages, are discovered and brought to the attention of health officials. As a result, two facts stand out clearly: the case load of known tuberculosis will be at least doubled in a very short period of time; in addition it will contain proportionately many more minimal cases than the present case load. Radical changes in procedures for tuberculosis control are consequently indicated.

The presentation at this time of the most recent record of tuberculosis mortality may therefore serve not only as a measure of past accomplishments but also as a base line for evaluating the success with which the very difficult problems of the immediate future will be met.

TUBERCULOSIS MORTALITY, 1939–41

In the 3-year period 1939–41, 181,288 deaths with tuberculosis as the primary cause were recorded in the continental United States. The average number of deaths per year was 60,429 and the average annual death rate per 100,000 population was 45.9. Tuberculosis (all forms) was seventh in numerical importance among the leading causes of death and accounted for 4.3 percent of deaths from all causes.

[3] Current Mortality Analysis, Vol. 1, No. 1, February 5, 1943.

Tuberculosis of the respiratory system accounted for more than 90 percent of all tuberculosis deaths.

Tuberculosis mortality is much higher among males than among females; the death rate for males in 1939–41 (53.6) was 41 percent higher than that for females (38.1). This excess in mortality among males is higher for tuberculosis than that for deaths from all causes; tuberculosis deaths formed 4.5 percent of all deaths among males and 4.0 percent among females.

There are very large racial differences in tuberculosis mortality; the rate for Negroes in 1940 (123.5) was nearly three and one-half times that for whites (36.6). The rate for Indians, Chinese, and other races was about double that for Negroes. This excess in the rate among nonwhites is larger than the excess in the total death rate: among whites tuberculosis accounted for only 3.6 percent of all deaths, among Negroes the percentage was 8.9, and among other races nearly one out of every five deaths was due to tuberculosis. Among nonwhites tuberculosis was third in numerical importance as a leading cause of death.

Age-specific mortality rates.—The death rate from tuberculosis (all forms) is very much higher in the older age groups than in the younger. The rate in 1940 was higher among infants (24.6) than among children 5–14 years of age, where it was at a minimum (5.5), increased rapidly in early adulthood, and continued to rise steadily with age. Table 1 and figure 1 present age-specific death rates by sex and race for 1939–41. A number of points of interest appear in figure 1. It may be seen that among children and young adults the rates for females are higher than those for males, but, beginning with age 30 and to the end of the life span, the rate is very much higher among males than among females, in both whites and nonwhites. Striking racial differences appear in the age-specific mortality rates. Among whites the rate increases with age but among nonwhites the highest rates are attained during the most productive age periods rather than at old age. Among nonwhite females the peak of mortality is reached in the age group 25–29. It is of interest that a similar situation obtained among the white population prior to 1930, as will be seen later. It was not until the early thirties that the age-specific mortality curve for whites flattened out. Figure 1 may also serve to indicate that the higher mortality rates for nonwhites are not due entirely to differences in age distribution of the races, since the increased mortality is present at practically all ages.

In addition to the age-specific death rates it is also of interest to consider the distribution of tuberculosis deaths by age, that is, what percentage of tuberculosis deaths occur in each age group. This obviously is not a measure of the risk of death from tuberculosis in the various age groups; however, from the point of view of

TABLE 1.—*Mortality from tuberculosis (all forms) by age, sex, and race: United States, 1939–41*

DEATH RATE PER 100,000 POPULATION

Race	Sex	Age												
		Under 5	5–9	10–14	15–19	20–24	25–29	30–34	35–44	45–54	55–64	65–74	75 and over	All ages [1]
All races	Both sexes	15.3	4.4	6.8	27.5	49.4	56.2	56.7	59.2	66.9	75.3	80.0	77.6	45.9
	Male	15.5	4.6	5.2	20.0	40.5	51.0	59.9	74.2	96.1	107.0	104.5	89.5	53.6
	Female	15.1	4.2	8.5	35.0	57.9	61.2	53.6	44.1	36.1	42.1	56.0	67.2	38.1
White	Both sexes	11.0	2.8	3.6	14.7	30.8	38.7	41.6	46.2	57.6	69.7	77.9	76.8	36.6
	Male	11.1	3.0	2.9	10.7	24.2	34.6	43.7	58.8	84.2	100.4	101.2	87.2	44.3
	Female	10.9	2.7	4.3	18.9	37.1	42.7	39.4	33.6	29.5	37.8	55.1	67.6	28.8
Nonwhite	Both sexes	45.6	15.5	30.6	129.4	203.6	201.9	191.6	172.4	168.6	150.3	106.6	90.6	127.4
	Male	47.6	16.4	22.3	97.1	184.4	195.4	208.9	213.6	225.7	192.3	142.9	124.2	137.3
	Female	43.7	14.6	39.0	159.7	220.2	207.7	175.6	133.2	108.2	102.7	67.6	60.6	117.9

AVERAGE ANNUAL NUMBER OF DEATHS, 1939–41

All races	Both sexes	1,613	475	800	3,388	5,720	6,236	5,811	10,846	10,373	7,960	5,104	2,052	60,429
	Male	831	251	307	1,234	2,306	2,782	3,038	6,803	7,650	5,785	3,308	1,109	35,433
	Female	782	224	493	2,154	3,413	3,454	2,774	4,043	2,724	2,174	1,796	943	24,996
White	Both sexes	1,014	265	373	1,616	3,180	3,828	3,827	7,604	8,183	6,865	4,596	1,904	43,283
	Male	520	141	152	588	1,239	1,690	2,000	4,848	6,143	5,042	2,955	1,013	26,351
	Female	494	124	220	1,028	1,941	2,138	1,827	2,757	2,041	1,823	1,640	891	16,932
Nonwhite	Both sexes	598	210	427	1,772	2,540	2,408	1,984	3,241	2,190	1,095	508	148	17,146
	Male	311	110	154	645	1,067	1,092	1,038	1,955	1,507	744	353	96	9,083
	Female	288	100	273	1,126	1,473	1,316	946	1,286	683	351	155	52	8,064

ENUMERATED POPULATION, 1940 (IN THOUSANDS)

All races	Both sexes	10,542	10,685	11,746	12,334	11,588	11,097	10,242	18,333	15,512	10,572	6,376	2,643	131,669
	Male	5,355	5,419	5,952	6,180	5,692	5,451	5,070	9,165	7,962	5,409	3,167	1,239	66,062
	Female	5,187	5,266	5,794	6,153	5,895	5,646	5,172	9,168	7,550	5,163	3,209	1,404	65,603
White	Both sexes	9,230	9,329	10,353	10,964	10,340	9,904	9,206	16,453	14,213	9,844	5,900	2,480	118,215
	Male	4,701	4,745	5,259	5,516	5,114	4,892	4,573	8,250	7,294	5,022	2,920	1,162	59,449
	Female	4,528	4,584	5,094	5,448	5,227	5,012	4,633	8,203	6,919	4,821	2,979	1,318	58,766
Nonwhite	Both sexes	1,312	1,356	1,393	1,369	1,248	1,192	1,036	1,880	1,299	729	477	163	13,454
	Male	653	674	693	664	579	559	497	915	668	387	247	77	6,613
	Female	659	681	700	705	669	634	539	965	631	342	230	86	6,841

[1] Includes a small number unrecorded as to age.

control programs, it is of importance to know in which age groups tuberculosis deaths are concentrated. Table 2 and figure 2 present this information. It becomes immediately apparent that a large proportion of tuberculosis deaths occur in males during the most productive industrial years and in females during the childbearing period; nearly one-half of all tuberculosis deaths occur between the ages of

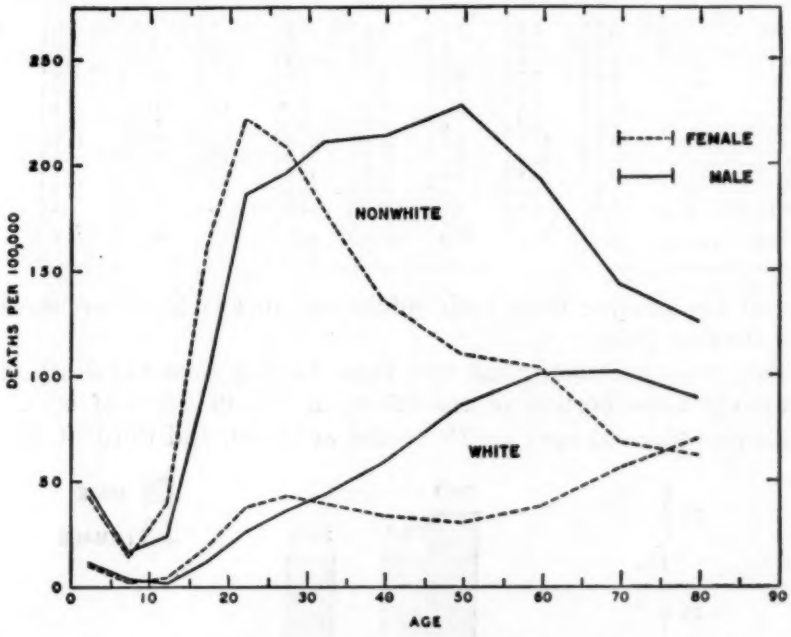

FIGURE 1.—Mortality from tuberculosis (all forms) by age; average annual rate (per 100,000) by sex and race: United States, 1939–41.

20 and 45 years. The concentration of deaths at these ages was even more pronounced among nonwhites, where nearly 60 percent of the deaths occurred at this most productive age period. Although it is undoubtedly true that some of the deaths at these ages are the final outcome of disease contracted earlier, nevertheless experience has shown that significant tuberculosis may be most readily found at the ages when people are most intensely engaged in gainful occupations.

Of particular importance is the quantitative study of the contribution which tuberculosis deaths make to deaths from all causes in the various age groups; in other words, of every 100 deaths from all causes in each age group, how many are due to tuberculosis. The remarkable decrease in tuberculosis mortality, which resulted in lowering tuberculosis from one of first rank in numerical importance to seventh, conceals the fact that this favorable situation does not hold

TABLE 2.—*Percentage distribution of deaths from tuberculosis (all forms) by age, sex, and race: United States, 1939–41*

(Tuberculosis deaths in each age-sex group shown as percentage of all tuberculosis deaths in each racial group)

Age	All races			White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Under 5	2.7	1.4	1.3	2.3	1.2	1.1	3.5	1.8	1.7
5–9	.8	.4	.4	.6	.3	.3	1.2	.6	.6
10–14	1.3	.5	.8	.9	.4	.5	2.5	.9	1.6
15–19	5.6	2.0	3.6	3.7	1.4	2.4	10.3	3.8	6.6
20–24	9.5	3.8	5.6	7.3	2.9	4.5	14.8	6.2	8.6
25–29	10.3	4.6	5.7	8.8	3.9	4.9	14.0	6.4	7.7
30–34	9.6	5.0	4.6	8.8	4.6	4.2	11.6	6.1	5.5
35–44	17.9	11.3	6.7	17.6	11.2	6.4	18.9	11.4	7.5
45–54	17.2	12.7	4.5	18.9	14.2	4.7	12.8	8.8	4.0
55–64	13.2	9.6	3.6	15.9	11.6	4.2	6.4	4.3	2.0
65–74	8.4	5.5	3.0	10.6	6.8	3.8	3.0	2.1	.9
75 and over	3.4	1.8	1.6	4.4	2.3	2.1	.9	.6	.3
All ages	100.0	58.6	41.4	100.0	60.9	39.1	100.0	53.0	47.0

for all age groups; from early adulthood to age 35 tuberculosis is still the first killer.

Tuberculosis is among the first three leading causes of death for a relatively large portion of the life span (15–49 years of age). It holds first place at ages 15–34, second at 35–39, and third at 40–49.

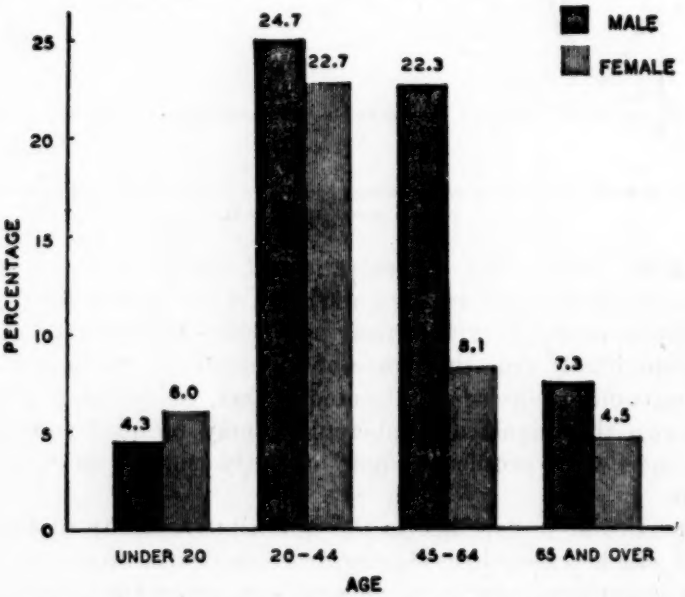

FIGURE 2.—Percentage distribution of deaths from tuberculosis (all forms) by age and sex: United States, 1939–41. (Tuberculosis deaths in each age-sex group shown as percentage of all tuberculosis deaths.)

For males tuberculosis is among the first three leading causes of death at ages 15–54 and for females at ages 10–44. For whites it is among the first three leading causes of death at ages 15–49; for both sexes,

ages 20–54 for males and 15–44 for females. For nonwhites, tuberculosis is among the first three leading causes of death at ages 5–44 and holds first place for a relatively long span of life (ages 10–39).

Moreover, tuberculosis comprises a considerable part of deaths from all causes in many of the age groups. It may be seen from table 3 that even among whites one out of every six deaths at ages 20–34 is due to tuberculosis. The situation is much worse among nonwhites where every third death at ages 15–34 is the result of this disease.

Figure 3 shows the relation of tuberculosis deaths to deaths from all causes by age, that is, at each age group the number of deaths due to tuberculosis out of every 100 deaths from all causes is shown. The percentage starts at a low point in the younger ages, increases rapidly to reach a maximum at the most productive age periods, and declines continuously thereafter. The peaks in the curve are approximately 5 years earlier among females (20–24 years of age) than among males (25–29 years of age). The peaks reached at the childbearing period for females are considerably higher than those reached by males at the most productive industrial ages.

TABLE 3.—*Deaths from tuberculosis (all forms) as percentages of deaths from all causes, by age, sex, and race: United States, 1939–41*

PERCENT OF DEATHS FROM ALL CAUSES

Age	All races			White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Under 5	1.2	1.1	1.3	0.9	0.8	1.0	2.2	2.1	2.4
5–9	4.1	3.8	4.5	2.8	2.5	3.1	10.5	10.2	10.7
10–14	6.8	4.4	10.2	3.9	2.7	5.8	18.6	12.7	25.4
15–19	15.9	10.3	23.0	10.2	6.2	16.1	32.5	20.0	37.9
20–24	20.5	14.8	27.6	15.7	10.5	22.9	33.4	28.8	37.8
25–29	20.3	16.7	24.6	17.2	13.7	21.8	28.3	25.4	31.3
30–34	16.9	16.1	17.7	15.1	14.2	16.3	21.8	22.0	21.5
35–44	11.4	12.6	9.8	10.6	11.5	9.2	14.0	16.2	11.5
45–54	6.3	7.8	4.2	6.1	7.5	3.9	7.5	9.3	5.2
55–64	3.4	4.1	2.3	3.3	4.0	2.3	4.1	5.0	2.9
65–74	1.7	2.0	1.4	1.7	1.9	1.3	2.1	2.6	1.8
75 and over	.6	.7	.6	.6	.6	.6	.8	1.0	.6
All ages	4.3	4.5	4.0	3.6	3.9	3.2	9.3	9.2	9.5

AVERAGE ANNUAL NUMBER OF DEATHS FROM ALL CAUSES

Under 5	136,549	77,281	59,267	109,224	62,130	47,094	27,324	15,151	12,173
5–9	11,610	6,646	4,964	9,601	5,567	4,034	2,009	1,079	930
10–14	11,748	6,900	4,849	9,459	5,683	3,776	2,290	1,217	1,073
15–19	21,325	11,976	9,349	15,872	9,495	6,377	5,453	2,481	2,972
20–24	27,919	15,533	12,386	20,318	11,831	8,487	7,601	3,702	3,899
25–29	30,707	16,675	14,033	22,197	12,372	9,825	8,511	4,303	4,208
30–34	34,457	18,831	15,626	25,354	14,123	11,231	9,103	4,708	4,395
35–44	95,295	54,091	41,204	72,066	42,046	30,020	23,229	12,045	11,184
45–54	163,371	98,554	64,818	134,092	82,424	51,668	29,280	16,130	13,150
55–64	232,662	139,685	92,977	205,653	124,743	80,910	27,009	14,942	12,067
65–74	300,343	168,512	131,831	276,559	155,039	121,520	23,784	13,473	10,311
75 and over	333,643	166,129	167,515	316,034	156,864	159,170	17,610	9,265	8,345
All ages	1,400,936	781,637	619,298	1,217,270	682,873	534,397	183,065	98,764	84,901

The data shown in table 3 and figure 3 have a practical application which is pertinent in these times. It is becoming extremely difficult to evaluate trends in tuberculosis mortality in many parts of the country because population estimates, on which mortality rates are based, are very unreliable. This is especially true for age-specific mortality rates which may be computed with a reasonable degree of accuracy only for a census year. The further removed from such a year, the less reliable become the data on age composition of the population. It thus becomes necessary to consider a useful index of the trend and current changes in tuberculosis mortality which is independent of population enumeration.

Figures similar to those shown in table 3, that is, the percentages of deaths from all causes which are due to tuberculosis, may well serve as such an index, particularly during the war period. The main limitation of this index is the fact that a radical change in the age-sex-race composition of the population will produce extreme changes in it even if no change occurred in the relative standing of tuberculosis

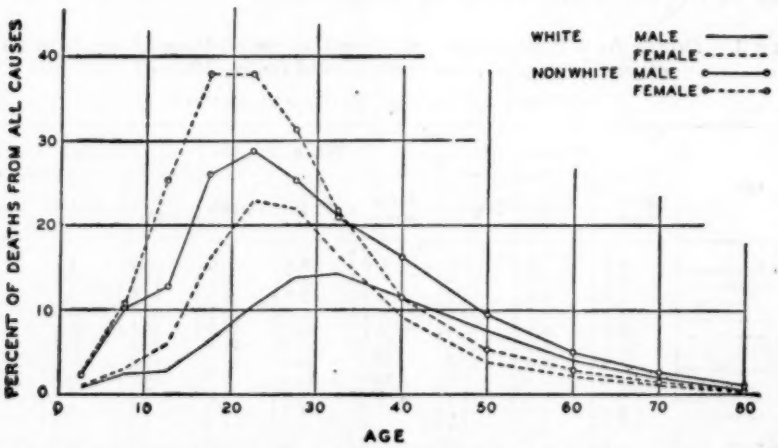

FIGURE 3.—Deaths from tuberculosis (all forms) as percentages of deaths from all causes, by age, sex, and race: United States, 1939–41.

mortality to mortality from all causes. However, this may easily be overcome when the index is constructed specific for these factors, as in table 3 and figure 3. If any one of the four curves presented in figure 3 be compared with a corresponding curve of a later period, it is possible to discover early the changes in tuberculosis mortality in relation to mortality from all causes. It is important to note that if an epidemic of considerable magnitude of any other disease occurs, the index may give a false sense of security in relation to tuberculosis because it may decrease owing to the inflated number of total deaths. These factors must therefore be taken into consideration when the index is used.

This index is the best available measure of changes in tuberculosis mortality in most areas and, if carefully studied, will serve as an indicator of the course of the disease, particularly in critical areas during the war period. Among its advantages, in addition to its complete independence of unknown population data, are the relative ease with which it may be obtained and the fact that it may be kept current at frequent intervals with little effort. It is, therefore, important for health departments to construct for their localities for previous years, curves similar to those shown in figure 3, and to keep them on a current basis for the purpose of observing changes in tuberculosis mortality that may be taking place.

Place of death and place of residence.—A relatively large proportion of tuberculosis deaths do not occur in the home and in many cases not even in the community in which the deceased resided. The tabulation of tuberculosis deaths according to place of death differs, therefore, from that according to place of residence. The former is influenced by the location of sanatoria, mental institutions, and general hospitals, while the latter comes nearer to measuring environmental and other conditions which are associated with tuberculosis. It cannot be said that present residence allocation procedures are completely satisfactory in the case of tuberculosis. Ideally each death should be allocated to the place where the disease was contracted but, because of the chronic nature of tuberculosis, that is very difficult to do in many cases. Nevertheless, rates based on residence figures are much more meaningful than those based on place of occurrence of death.

Table 4 presents for the year 1940 [4] the distribution of deaths from respiratory tuberculosis in three broad groups of communities: the larger cities (100,000 or more population), intermediate-sized cities (2,500 to 100,000 population), and rural areas. Figures are presented to show the number of deaths that occurred in these localities, the number of deaths of residents of these localities, and death rates computed on a residence basis. It may be seen that the number of persons who died in rural areas is larger than the number of residents of these areas who died. Conversely, deaths occurring in the larger cities are fewer than the number of deaths of residents of those same areas. This is an indication of the considerable movement of patients primarily to sanatoria, which are generally located in rural areas.

The differences in death rates from tuberculosis (all forms) in 1939–40 among residents of cities of specified size are shown in figure 4 for males and for females. It will be seen that the death rate for males is considerably higher among residents of the larger cities (71.4) than among residents of the intermediate-sized cities (52.3) and this in turn is much higher than the rate among residents of rural areas (44.0). It

[4] Similar figures for 1939 and 1941 are not available.

TABLE 4.—*Mortality from respiratory tuberculosis in cities of specified size and rural areas: Deaths that occurred in these areas, deaths to residents of these areas, and death rates on a residence basis, United States, 1940* [1]

DEATHS PER 100,000 RESIDENTS

Race	Sex	Cities of 100,000 or more	Cities of 2,500–100,000	Rural areas	All areas
All races	Both sexes	50.1	40.4	38.2	42.2
	Male	65.6	48.4	41.5	50.2
	Female	35.1	32.7	34.6	34.2
White	Both sexes	37.8	33.0	31.4	33.7
	Male	52.1	40.9	35.4	41.7
	Female	24.1	25.5	27.1	25.7
Nonwhite	Both sexes	165.5	128.0	86.6	116.6
	Male	196.9	142.7	86.4	126.7
	Female	136.7	115.1	86.8	106.9

NUMBER OF DEATHS TO RESIDENTS OF AREA

All races	Both sexes	19,017	14,707	21,852	55,576
	Male	12,218	8,596	12,331	33,145
	Female	6,799	6,111	9,521	22,431
White	Both sexes	12,998	11,103	15,787	39,888
	Male	8,791	6,715	9,261	24,767
	Female	4,207	4,388	6,526	15,121
Nonwhite	Both sexes	6,019	3,604	6,065	15,688
	Male	3,427	1,881	3,070	8,378
	Female	2,592	1,723	2,995	7,310

NUMBER OF DEATHS OCCURRING IN AREA

All races	Both sexes	16,968	12,588	26,020	55,576
	Male	10,790	7,210	15,145	33,145
	Female	6,178	5,378	10,875	22,431
White	Both sexes	11,661	9,536	18,691	39,888
	Male	7,768	5,657	11,342	24,767
	Female	3,893	3,879	7,349	15,121
Nonwhite	Both sexes	5,307	3,052	7,329	15,688
	Male	3,022	1,553	3,803	8,378
	Female	2,285	1,499	3,526	7,310

[1] Unpublished data furnished by U. S. Bureau of Census.

is significant that the variation of the death rate with size of city is almost negligible for females. This may be indirect evidence of the association between tuberculosis and industrialization. A similar difference obtains by size of city for the white and for the nonwhite population.

More than one-half (56 percent) of all deaths from respiratory tuberculosis occurred in institutions. The percentage of institutional deaths was higher among whites (58 percent) than among nonwhites (52 percent). The distribution of deaths from respiratory tuberculosis in 1940 by type of institution in which they occurred is shown in table 5. The largest number of deaths occurred in tuberculosis hospitals (24 percent). The next largest number occurred in general hospitals (23 percent), and a relatively large number occurred in

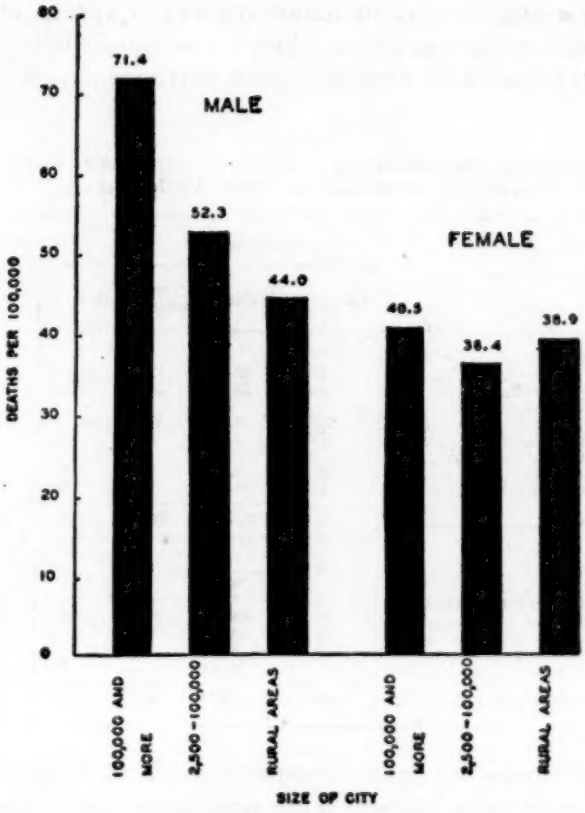

FIGURE 4.—Mortality from tuberculosis (all forms) among residents of cities of specified size and of rural areas by sex: United States, 1939–40.

mental institutions (6 percent). In terms of type of control of the institutions, the largest number of deaths occurred in governmental institutions (State, city, and county), in which 71 percent of the institutional deaths occurred. Fifteen percent of all institutional deaths occurred in private nonprofit institutions. More than 2,100 deaths from tuberculosis occur annually in institutions operated by the Public Health Service.

Deaths from respiratory and other forms of tuberculosis.—Tuberculosis of the respiratory system accounted for the largest proportion of all deaths from tuberculosis (92 percent). However, deaths from other forms of tuberculosis are by no means negligible since they amount to about 5,000 annually. Of nonrespiratory tuberculosis deaths, the largest number (about 1,400) are due to tuberculous meningitis, a considerable number are due to so-called disseminated or miliary tuberculosis (approximately 1,100 deaths), and the remainder are scattered among tuberculosis of various parts of the body. Although nonrespiratory tuberculosis accounts for fewer than 10 percent of all

tuberculosis deaths, it may be important to pay special attention to these types during the war period, since it was especially in nonrespiratory types of tuberculosis that the recent wartime increase occurred in England.

TABLE 5.—*Percentage and number of deaths from respiratory tuberculosis by type of institution in which they occurred: United States, 1940*

Place of death	Percentage			Number of deaths		
	All races	White	Non-white	All races	White	Non-white
Type of institution:						
In no institution	44.1	42.5	47.9	24,467	16,949	7,518
General hospitals	22.5	22.1	23.4	12,507	8,833	3,674
Maternal and infant hospitals	.1	.1	.1	57	44	13
Tuberculosis hospitals	23.7	24.7	21.1	13,146	9,839	3,307
Other nonresident hospitals	1.7	1.8	1.4	937	716	221
Nonresident institutions	.6	.5	.6	320	219	101
Mental institutions	6.4	7.2	4.3	3,550	2,876	674
Other resident institutions	1.1	1.0	1.1	592	412	180
Total deaths	100.0	100.0	100.0	55,576	39,888	15,688
Type of control:						
Indian Affairs	0.9	----------	3.3	269	2	267
Army, Navy	.5	0.6	.4	171	141	30
U. S. Public Health Service and other	6.8	7.4	5.0	2,114	1,704	410
State, city, county	70.9	68.6	77.7	22,071	15,725	6,346
Nonprofit	14.9	16.8	9.6	4,641	3,857	784
Proprietary	3.1	3.6	1.8	971	828	143
Other	2.8	3.0	2.3	872	682	190
Deaths in institutions	100.0	100.0	100.0	31,109	22,939	8,170

The higher rate for males compared with that for females was present in both types but was more pronounced for respiratory than for "other forms" of tuberculosis. The difference between whites and nonwhites was also apparent in both types of tuberculosis but was greater in nonrespiratory tuberculosis. The rate for respiratory tuberculosis among males was 125.1 for nonwhites and 41.5 for whites, a ratio of 3 to 1; while for nonrespiratory tuberculosis the rates were 12.8 for nonwhites and 3.2 for whites, a ratio of 4 to 1.

The form of the death rate curve by age is not the same for the different types of tuberculosis. The main difference occurs in tuberculous meningitis. Figure 5 presents on a semilogarithmic scale death rates separately for pulmonary tuberculosis, tuberculous meningitis, and all other forms. It may be seen that the curve for tuberculous meningitis is different from that of either of the other two types. The latter two increase with age, while the curve for tuberculous meningitis decreases continuously with age. Whereas in early childhood there were nearly as many deaths from tuberculous meningitis as there were from pulmonary tuberculosis, in the older age groups the former is of negligible numerical importance.

The variation in the death rate by size of community was not much different for tuberculosis of the respiratory system than for other

forms. For example, the rate for pulmonary tuberculosis among whites was 38.6 in the larger cities and 31.6 in rural areas, while the rate for other forms of tuberculosis decreased from 3.1 to 2.6. Similar figures obtained for nonwhites, for whom the rate for respiratory tuberculosis was 167.4 in the larger cities and 86.7 in the rural areas, while for other forms of tuberculosis the rate was 19.8 in the larger

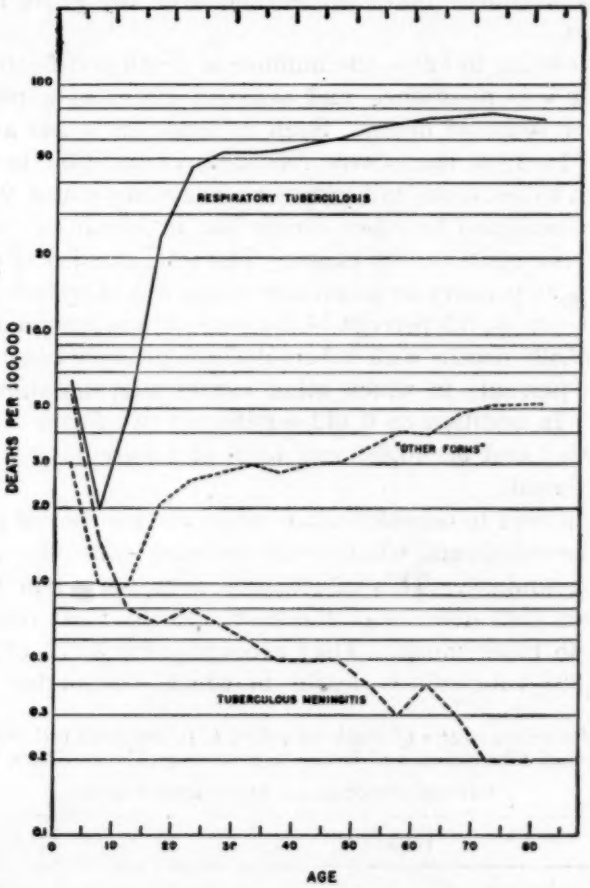

FIGURE 5.—Death rates (per 100,000) from pulmonary tuberculosis, tuberculosis meningitis, and from other forms of tuberculosis by age: United States, 1939–40.

cities and 7.1 in the rural areas. It is interesting to note that, for both tuberculosis of the respiratory system and for other forms of tuberculosis, the difference between the death rate for whites and that for nonwhites increased with size of city. The ratio of the nonwhite rate to that of the white was nearly 5 to 1 in the larger cities and decreased continuously with size of community to 2.7 to 1 in the rural areas.

Contributory causes of death.—The statistics presented above are based on deaths which were assigned to tuberculosis as the primary cause of death. These do not represent all deaths due to the disease.

For one thing not all cases of tuberculosis are diagnosed and reported as such on death certificates. In addition, on a number of certificates more than one cause of death is stated. In such cases death is assigned to a primary cause by means of set rules specified in the Manual of Joint Causes. The understatement of tuberculosis deaths resulting from the latter is not very large because, according to the Manual, tuberculosis takes precedence over the great majority of other causes.

It is interesting to know the number of death certificates on which tuberculosis was mentioned and assigned either as a primary or a contributory cause of death. Such information is not available for all years. In 1940 there were recorded, in addition to the 60,428 deaths with tuberculosis (all forms) as a primary cause, 2,214 deaths which were assigned to other causes but in which tuberculosis was mentioned as a contributory cause. The total number of deaths with tuberculosis as primary or secondary cause was therefore 62,642 and, of that number, in 3.5 percent of the cases it was secondary.

Of the 60,428 deaths with tuberculosis as primary cause there were 13,898 (23 percent) in which other causes were mentioned as contributory. In addition on 6,442 certificates two forms of the disease were recorded and on 40,888 one form of tuberculosis was the only cause mentioned.

It is of interest to consider what causes are mentioned as contributory to tuberculosis and what are the primary causes to which tuberculosis is secondary. This information is presented in table 6. It may be seen that diseases of the heart are the most common cause secondary to tuberculosis. They accounted for 3,273 (23.6 percent) of the 13,898 tuberculosis deaths in which a secondary cause was

TABLE 6.—*Principal causes of death secondary to tuberculosis (all forms) and those to which tuberculosis (all forms) is secondary: United States, 1940*

CAUSES SECONDARY TO TUBERCULOSIS

Cause	Percent	Number
Diseases of heart (all forms)	23.6	3,273
Influenza and pneumonia (all forms)	13.7	1,903
Mental disease and deficiency	9.1	1,268
Diabetes mellitus	5.7	795
Nephritis (all forms)	5.7	788
All other causes	42.2	5,871
Total	100.0	13,898

CAUSES TO WHICH TUBERCULOSIS IS SECONDARY

Syphilis (all forms)	40.9	906
Cancer (all forms)	25.4	563
Accidents	7.8	172
Diseases of heart (all forms)	6.8	151
Influenza and pneumonia (all forms)	2.8	63
All other causes	16.2	359
Total	100.0	2,214

mentioned. The next group of secondary causes was influenza and pneumonia, accounting for 13.7 percent, followed by mental disease and deficiency (9.1 percent).

Of the 2,214 deaths in which tuberculosis appears as a contributory cause, the most common primary cause was syphilis, accounting for 906 deaths (40.9 percent). Cancer was next in frequency with 563 deaths (25.4 percent). Accidents were third with 172 deaths (7.8 percent).

TREND OF TUBERCULOSIS MORTALITY

Many factors have contributed to the extraordinary achievements in the control of tuberculosis as reflected in the reduction of the death rate from around 200 per 100,000 at the beginning of the century to less than 45 per 100,000 at present. These factors are in the main the results of man's endeavor to control his environment. Some are tangible, such as the discovery of the causative organism and modes of transmission of the disease; many others are not so definite and may be stated vaguely to be the results of improvements in the "standard of living." The direct relationship of any one factor to the reduction of tuberculosis mortality may be difficult to prove and open to debate. The combination of all the factors, however, has reduced the mortality rate, in the course of half a century, to such an extent that the eradication of tuberculosis is within the realm of possibility. But it must be realized that it is at this point in the trend that the ratio of effort exerted to results achieved is highest. It is relatively easier, for example, to produce a 10-percent reduction from a high rate of 200 than it is to achieve a similar percentage reduction from a rate of 50. This statement is made only to emphasize that, in order to achieve the desired final results, even greater efforts will be required.

Table 7 and figure 6 present graphically the reduction in tuberculosis mortality from 1900 to 1941. It is rare to find a disease which shows a continuous, year-by-year decline such as is apparent in figure 6. With only minor exceptions (particularly that of 1918) the rate each year has been lower than the one preceding it. Actually the reduction has been even more gratifying than that shown in the figure, for during this period the population of the United States was continually aging. In addition, statistics are presented for the expanding Death Registration Area. The States that came into this Area in later years are also those having the higher tuberculosis mortality rates. The actual improvement in tuberculosis mortality is therefore even greater than that shown in the figure.

The decrease in tuberculosis mortality has been greater for females than for males. Between 1920 and 1940 there has been a 66-percent reduction in the mortality of females but only a 54-percent reduction

549826°—43——3

TABLE 7.—*Death rates from tuberculosis (all forms): United States expanding Death Registration Area, 1900–41*

Year	Tuberculosis (all forms)		Year	Tuberculosis (all forms)	
	Deaths per 100,000	Number of deaths		Deaths per 100,000	Number of deaths
1941	44.4	59,251	1920	113.1	97,366
1940	45.9	60,428	1919	125.6	104,486
1939	47.1	61,609	1918	149.8	118,334
1938	49.1	63,735	1917	143.5	100,789
1937	53.8	69,324	1916	138.4	92,688
1936	55.9	71,527	1915	140.1	86,726
1935	55.1	70,080	1914	141.7	86,359
1934	56.7	71,609	1913	143.5	83,434
1933	59.6	74,842	1912	145.4	79,734
1932	62.5	74,267	1911	155.1	83,663
1931	67.8	80,129	1910	153.8	73,028
1930	71.1	83,352	1909	156.3	69,105
1929	75.3	86,885	1908	162.1	62,628
1928	78.3	89,007	1907	174.2	60,194
1927	79.6	85,194	1906	175.8	59,393
1926	85.5	88,740	1905	179.9	39,168
1925	84.8	86,510	1904	188.1	40,125
1924	87.9	87,346	1903	177.2	37,102
1923	91.7	88,788	1902	174.2	35,859
1922	95.3	88,385	1901	189.9	38,434
1921	97.6	85,739	1900	194.4	38,820

in that of males. In 1920 the rate for males (116.6) was only 6 percent higher than that for females (109.5), whereas in 1941 the mortality from tuberculosis for males (52.3) was 43 percent higher than that for females (36.5). It is of interest that the acceleration in the rate of decrease in mortality of females as compared to that of

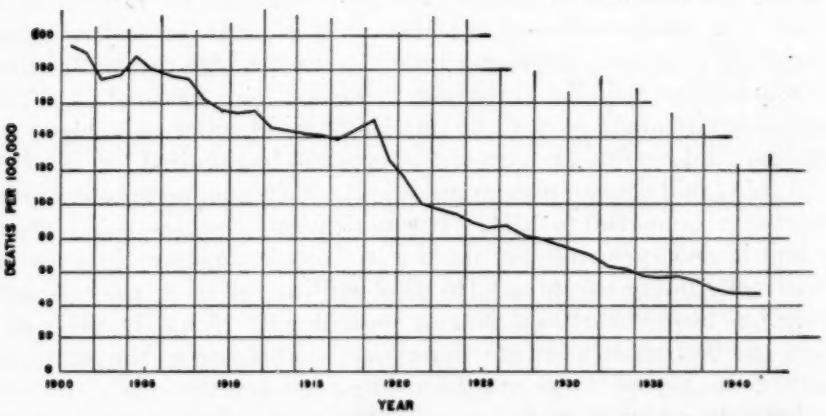

FIGURE 6.—Trend of mortality from tuberculosis (all forms): United States expanding Death Registration Area, 1900–41.

males began in the late twenties and continued through the decade of the thirties. The rate of decrease for males has been rather uniform during the 20-year period, whereas for females the rate of decrease paralleled that of males up to 1927 and from then on the reduction was at a much faster pace.

The reduction in tuberculosis mortality was experienced by other racial groups as well as by whites. However, the reduction was greater for whites than for nonwhites; between 1920 and 1940 there was a reduction of 63 percent among the white population and only a 51-percent decrease among nonwhites. The result is that while in 1920 the rate for nonwhites (262.4) was about two and one-half times as high as that of whites (99.5), in 1940 the rate for nonwhites (128.0) was three and one-half times that for whites (36.6). In the last decade, however, the rate of decrease among nonwhites (33 percent) was nearly the same as that among whites (37 percent). It was in the decade between 1920 and 1930 that the reduction was much more accelerated among whites (42 percent) than among nonwhites (27 percent).

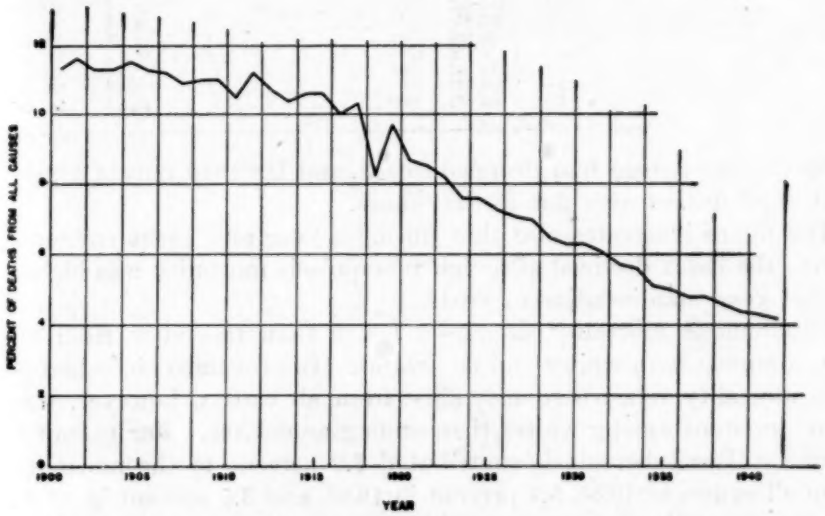

FIGURE 7.—Deaths from tuberculosis (all forms) as percentages of deaths from all causes: United States expanding Death Registration Area, 1900–41.

The larger decrease in the tuberculosis mortality rate among females as compared with males was present among whites (70 percent as against 57 percent) and among nonwhites (57 percent as against 46 percent).

That the reduction in tuberculosis mortality has been more accelerated than that of mortality from all causes is illustrated by figure 7 and table 8, which show the trend of tuberculosis deaths as percentages of deaths from all causes from 1900 to 1941. In 1900 more than 11 percent of all deaths were assigned to tuberculosis. The proportion of tuberculosis deaths decreased only slightly in the first 20 years, but since 1920 the decline has been rapid. In 1919 nearly 10 percent of all deaths were due to tuberculosis, in

TABLE 8.—*Deaths from tuberculosis (all forms) as percentages of deaths from all causes: United States expanding Death Registration Area, 1900–41*

Year	Deaths from tuberculosis as percentages of deaths from all causes	Number of deaths from all causes	Year	Deaths from tuberculosis as percentages of deaths from all causes	Number of deaths from all causes
1941	4.2	1,397,642	1920	8.7	1,118,070
1940	4.3	1,417,269	1919	9.7	1,072,263
1939	4.4	1,387,897	1918	8.3	1,430,079
1938	4.6	1,381,391	1917	10.3	981,239
1937	4.8	1,450,427	1916	10.0	924,971
1936	4.8	1,479,228	1915	10.6	815,500
1935	5.0	1,392,752	1914	10.6	810,914
1934	5.1	1,396,903	1913	10.4	802,909
1933	5.6	1,342,106	1912	10.7	745,771
1932	5.7	1,293,269	1911	11.2	749,918
1931	6.1	1,307,273	1910	10.5	696,856
1930	6.3	1,327,240	1909	11.0	630,057
1929	6.3	1,369,757	1908	11.0	567,245
1928	6.5	1,361,987	1907	10.9	550,245
1927	7.0	1,211,627	1906	11.2	531,005
1926	7.1	1,257,256	1905	11.3	345,863
1925	7.3	1,191,809	1904	11.5	349,855
1924	7.6	1,151,076	1903	11.3	327,295
1923	7.6	1,174,065	1902	11.3	318,636
1922	8.2	1,083,952	1901	11.6	332,203
1921	8.5	1,009,673	1900	11.3	343,217

1930 the percentage had dropped to 6.3, and by 1940 only 4.3 percent of all deaths were due to that cause.

The figure illustrates also that during a year of a great epidemic (1918) the index declined although tuberculosis mortality was higher in that year than in adjacent years.

Tuberculosis mortality decreased faster than mortality from all causes among both whites and nonwhites. Improvement in tuberculosis mortality relative to mortality from all causes, however, was more apparent among whites than among nonwhites. For example, among whites tuberculosis contributed 7.9 percent to the mortality from all causes in 1920, 5.4 percent in 1930, and 3.5 percent in 1940; the corresponding percentages among nonwhites were 14.8, 11.8, and 9.3, respectively.

There was practically no difference between the sexes in the improvement of tuberculosis mortality relative to mortality from all causes. The proportions which tuberculosis formed of deaths from all causes were nearly the same for both sexes in each of the three decades.

There have been great changes in terms of the place (rank) of tuberculosis among the leading causes of death since the beginning of the century. For both sexes, all races and all ages, tuberculosis was the first cause in numerical importance in 1900 and in 1910, third in 1920, and seventh in 1930 and in 1940. For nonwhites the rank of tuberculosis as a cause of death changed much less than for whites: it was second in numerical importance in 1920 and in 1930, and third in 1940. Among whites, tuberculosis was third in

rank as a cause of death for males in 1920 and seventh in 1930 and in 1940. Corresponding figures for females were fourth, sixth, and eighth, respectively.

The reduction in tuberculosis mortality occurred in both pulmonary and "other forms" of tuberculosis. The rate for pulmonary tuberculosis was 174.5 in 1900 and 40.8 in 1941. The corresponding figures for "other forms" of tuberculosis were 19.9 and 3.7, respectively. The reduction in the nonpulmonary forms to 1920 was not as continuous or regular as that in pulmonary tuberculosis. In fact, in the first decade of the century there was no reduction in the mortality from "other forms" of tuberculosis and only slight annual reductions up to 1920. In the last decade, however, the decrease in

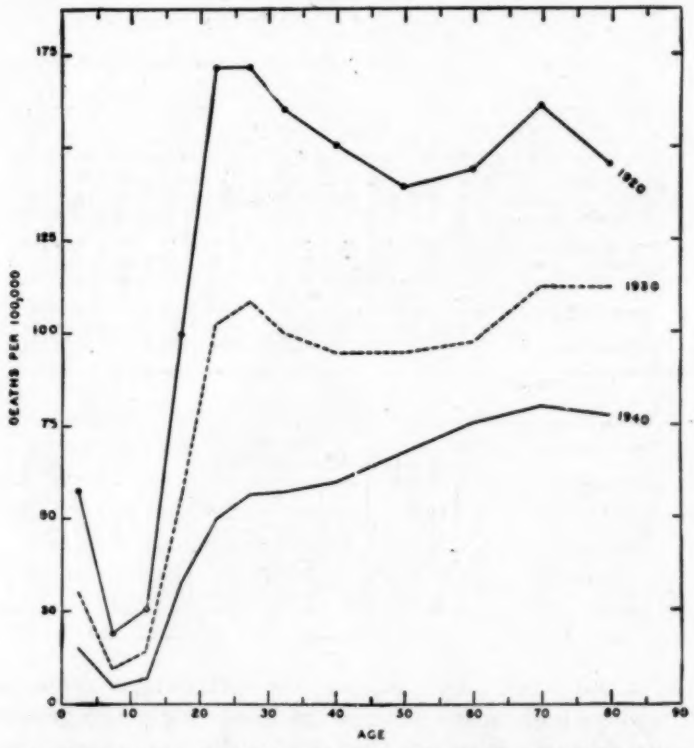

FIGURE 8.—Mortality from tuberculosis (all forms) by age for three decades: United States Death Registration Area. (Average annual death rates 1919–21, 1929–31, and 1939–41.)

nonpulmonary tuberculosis was much more rapid than that in tuberculosis of the respiratory system. Thus, the rate for the former was 8.1 in 1930 and 3.7 in 1941, a decrease of 54 percent. The corresponding figures for pulmonary tuberculosis were 63.0 and 40.8, a reduction of only 35 percent.

Trend of tuberculosis mortality by age.—Every age group shared in the reduction of the mortality rate. However, not all the age

groups benefited to the same degree. The differences in the relative reduction in the various age groups have resulted in a flattening out of the age-specific curve, particularly among white males, as may be seen from figure 8 and table 9, which show tuberculosis mortality rates by age in each of three decades (1919–21, 1929–31, 1939–41). The curves for the first two decades are peaked at ages 25–29. In the curve for 1940 the rate increased continuously with age, the highest rate being attained at old age. This is a result of the fact that the rate of reduction in tuberculosis mortality has not been

TABLE 9.—*Average annual death rates from tuberculosis (all forms) by age, sex, and race: United States Death Registration Area, 1919–21 and 1929–31*

Race	Sex	Age												
		Under 5	5–9	10–14	15–19	20–24	25–29	30–34	35–44	45–54	55–64	65–74	75 and over	All ages
1929–31														
All races	Both sexes	29.9	9.7	13.4	55.3	102.3	108.1	99.9	93.5	93.6	97.0	111.8	111.4	71.4
	Male	31.6	9.9	9.9	40.1	84.8	99.7	104.5	112.3	120.6	122.9	129.9	117.6	76.3
	Female	28.2	9.5	16.9	70.5	119.1	116.3	95.3	73.7	64.1	68.9	93.0	105.8	66.3
White	Both sexes	23.7	6.6	7.9	35.5	73.4	80.9	79.0	77.8	82.4	90.4	107.2	107.2	58.1
	Male	25.1	6.8	6.2	24.7	57.9	74.1	81.8	95.0	108.6	115.6	123.6	111.5	63.4
	Female	22.3	6.4	9.6	46.2	88.5	87.6	76.1	59.5	53.9	63.5	90.2	103.3	52.5
Nonwhite	Both sexes	79.1	34.0	59.0	215.1	328.1	323.8	293.7	245.4	207.8	188.0	191.7	172.6	191.8
	Male	84.8	34.4	41.2	168.9	306.0	311.3	319.5	285.7	238.9	214.9	234.2	207.0	194.4
	Female	73.4	33.7	76.7	257.8	347.6	335.3	269.0	205.9	171.6	153.1	143.6	141.4	189.2
1919–21														
All races	Both sexes	57.1	18.3	25.7	99.1	170.8	171.0	159.8	150.1	138.3	143.0	160.8	144.8	113.1
	Male	60.6	18.2	18.3	74.5	151.0	162.6	163.7	170.1	169.6	175.5	182.9	150.2	118.0
	Female	53.5	18.3	33.3	123.3	189.5	179.4	155.6	128.3	102.6	107.1	137.9	140.1	108.0
White	Both sexes	51.8	14.6	18.4	75.8	136.9	144.9	140.6	134.5	127.0	135.8	154.6	139.0	99.0
	Male	55.4	14.9	13.5	55.4	119.3	139.0	146.1	154.7	158.5	167.5	175.0	142.1	105.1
	Female	48.2	14.3	23.4	96.0	153.8	150.9	134.8	112.6	91.5	101.2	133.5	136.2	92.6
Nonwhite	Both sexes	113.8	54.6	94.2	319.6	487.8	450.1	393.5	322.5	277.3	264.8	267.6	239.6	268.3
	Male	118.0	51.8	63.9	262.1	461.3	430.6	389.1	342.7	294.2	300.3	309.1	275.5	261.0
	Female	109.6	57.4	124.3	372.5	511.1	467.6	397.7	300.9	254.1	218.1	218.4	205.3	275.8

uniform at all ages. In general, the percentage reduction was nearly twice as high in the younger as in the older age groups. For whites the decrease between 1920 and 1940 was approximately 80 percent in the age group under 20, around 70 percent at ages 20–44, and less than 50 percent in the older age groups. The same is true when the 1940 rates are compared with those of 1930: the decrease was approximately 55 percent in the younger ages, 45 percent at ages 20–44, and 25 percent in the older ages. Although not so pronounced as in the case of whites, a similar differential by age in the rate of decrease is also noticed among nonwhites. For nonwhites, however, the curve for 1940 still exhibits a peak at ages 20–29.

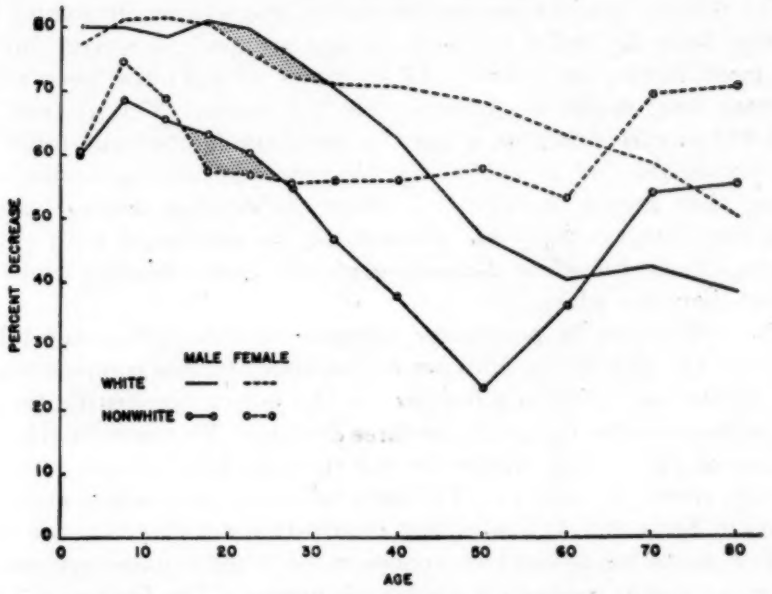

FIGURE 9.—Percentage decrease in the mortality rate from tuberculosis (all forms) by age, sex, and race: 1939–41 compared with 1919–21.

TABLE 10.—*Percentage decrease in the mortality rate from tuberculosis (all forms) by age, sex, and race: 1939–41 compared with 1929–31 and with 1919–21, United States Death Registration Area*

Race	Sex	Age												
		Under 5	5–9	10–14	15–19	20–24	25–29	30–34	35–44	45–54	55–64	65–74	75 and over	All ages
1939–41 COMPARED WITH 1929–31														
All races	Both sexes	48.8	54.6	49.3	50.3	51.7	48.0	43.2	36.7	28.5	22.4	28.4	30.3	35.7
	Male	50.9	53.5	47.5	50.1	52.2	48.8	42.7	33.9	20.3	12.9	19.6	23.9	29.8
	Female	46.5	55.8	49.7	50.4	51.4	47.4	43.8	40.2	43.7	38.9	39.8	36.5	42.5
White	Both sexes	53.6	57.6	54.4	58.6	58.0	52.2	47.3	40.6	30.1	22.9	27.3	28.4	37.0
	Male	55.8	55.9	53.2	56.7	58.2	53.3	46.6	38.1	22.5	13.1	18.1	21.8	30.1
	Female	51.1	57.8	55.2	59.1	58.1	51.3	48.2	43.5	45.3	40.5	38.9	34.6	45.1
Nonwhite	Both sexes	42.4	54.4	48.1	39.8	37.9	37.6	34.9	29.7	18.9	20.1	44.4	47.5	33.6
	Male	43.9	52.3	45.9	42.5	39.7	37.2	34.6	25.2	5.5	10.5	39.0	40.0	29.4
	Female	40.5	56.7	49.2	38.1	36.7	38.1	34.7	35.3	36.9	32.9	52.9	57.1	37.7
1939–41 COMPARED WITH 1919–21														
All races	Both sexes	73.2	76.0	73.5	72.3	71.1	67.1	64.5	60.6	51.6	47.3	50.2	46.4	59.4
	Male	74.4	74.7	71.6	73.2	73.2	68.6	63.4	56.4	43.3	39.0	42.9	40.4	54.6
	Female	71.8	77.0	74.5	71.6	69.4	65.9	65.6	65.6	64.8	60.7	59.4	52.0	64.7
White	Both sexes	78.8	80.8	80.4	80.6	77.5	73.3	70.4	65.7	54.6	48.7	49.6	44.7	63.0
	Male	80.0	79.9	78.5	80.7	79.7	75.1	70.1	62.0	46.9	40.1	42.2	38.6	57.8
	Female	77.4	81.1	81.6	80.3	75.9	71.7	70.8	70.2	67.8	62.6	58.7	50.4	68.9
Nonwhite	Both sexes	59.9	71.6	67.5	59.5	58.3	55.1	51.3	46.5	39.2	43.2	60.2	62.2	52.5
	Male	59.7	68.3	65.1	63.0	60.0	54.6	46.3	37.7	23.3	36.0	53.8	55.1	47.4
	Female	60.1	74.6	68.6	57.1	56.9	55.6	55.8	55.7	57.4	52.9	69.0	70.5	57.3

The relative decrease in the mortality rate was much greater for females than for males in the older age groups. However, during the most fertile age period (15–29 years of age) the percentage decrease was smaller for females than for males. This is true for both whites and nonwhites as may be seen from figure 9 and table 10. For nonwhites the period when the reduction among males was higher than among females is 5 years earlier than among whites. This may suggest that this phenomenon is associated with child-bearing, since nonwhite females generally begin bearing children earlier than the white.

The differences in percentage decrease of tuberculosis mortality rates by age and sex, in addition to the changing age composition of the population, result in differences in the percentage distribution of tuberculosis deaths by age in the three decades. The detailed data on percent of tuberculosis deaths for the three decades by age, sex, and race are shown in table 11. The data (all races, both sexes) are illustrated in figure 10. It is seen that relatively fewer deaths in the later than in the earlier decades are concentrated in the younger age groups and more deaths occur in the older age groups. The biggest relative change occurred in the age group 45–64. In this age group occurred

TABLE 11.—*Percentage distribution of deaths from tuberculosis (all forms) by age, sex, and race: United States Death Registration Area, 1939–41, 1929–31, and 1919–21*

(Tuberculosis deaths in each age-sex group shown as percentage of all tuberculosis deaths in each racial group)

Age	All races			White			Nonwhite		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
1939–41									
Under 20	10.4	4.3	6.0	7.6	3.2	4.3	17.5	7.1	10.4
20–44	47.3	24.7	22.6	42.6	22.6	20.0	59.3	30.0	29.3
45–64	30.3	22.2	8.1	34.8	25.8	8.9	19.2	13.1	6.0
65 and over	11.8	7.3	4.5	15.0	9.2	5.8	3.8	2.6	1.2
All ages	100.0	58.6	41.4	100.0	60.9	39.1	100.0	53.0	47.0
1929–31									
Under 20	14.4	6.1	8.2	11.8	5.1	6.7	21.3	8.9	12.4
20–44	53.5	27.4	26.1	51.0	26.4	24.6	60.4	30.2	30.2
45–64	23.4	15.6	7.8	26.5	17.9	8.6	15.0	9.4	5.6
65 and over	8.6	4.9	3.7	10.6	5.9	4.6	3.1	1.9	1.1
All ages	100.0	54.1	45.9	100.0	55.4	44.6	100.0	50.5	49.5
1919–21									
Under 20	16.9	7.4	9.5	15.4	6.8	8.6	22.7	9.5	13.3
20–44	55.5	28.4	27.1	54.4	28.3	26.1	59.9	28.9	31.0
45–64	20.7	13.5	7.3	22.5	14.7	7.8	13.8	8.6	5.2
65 and over	6.7	3.7	3.0	7.6	4.2	3.4	3.2	1.9	1.3
All ages	100.0	53.1	46.9	100.0	54.1	45.9	100.0	49.1	50.9

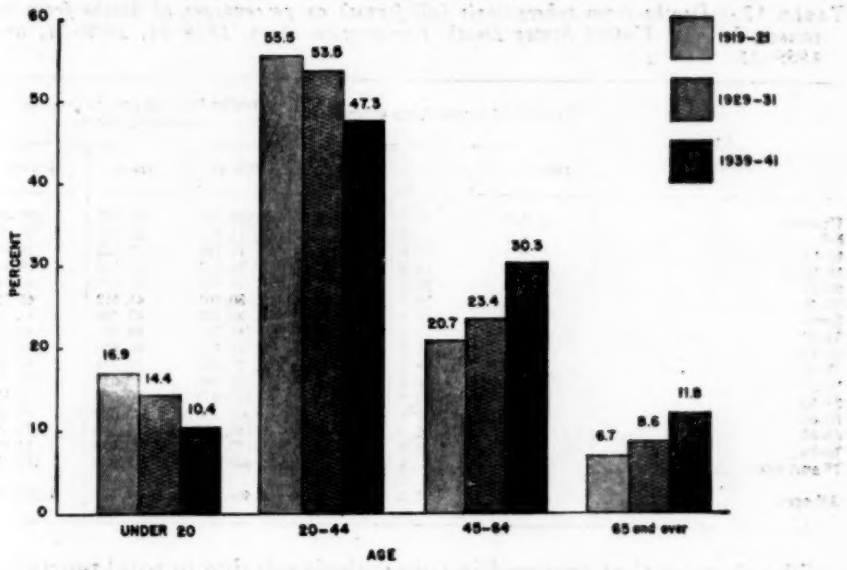

FIGURE 10.—Percentage distribution of deaths from tuberculosis (all forms) in broad age groups: United States Death Registration Area, 1919–21, 1929–31, and 1939–41.

20.7 percent of all tuberculosis deaths in 1920 and 30.3 percent in 1940. On the other hand, while one-sixth of all tuberculosis deaths in 1920 were of persons under 20 years of age, in 1940 only one-tenth of the deaths occurred in that age group. The change is consistent and gradual for the three decades and is in the same general direction in each of the two sexes and of the two races, as may be seen from table 11.

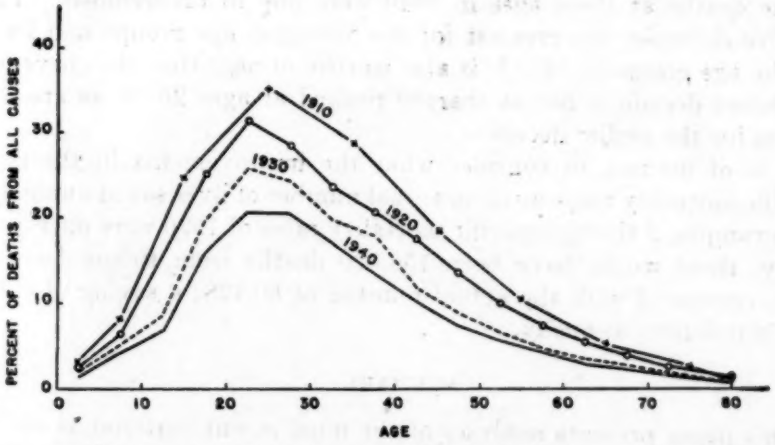

FIGURE 11.—Deaths from tuberculosis (all forms) as percentages of deaths from all causes by age for four decades: United States Death Registration Area. (Death rates for 1910, and average annual death rates for 1919–21, 1929–31, and 1939–41.)

TABLE 12.—*Deaths from tuberculosis (all forms) as percentages of deaths from all causes, by age: United States Death Registration Area, 1919–21, 1929–31, and 1939–41*

Age	Percent of deaths from all causes			Deaths from all causes (average annual number)		
	1939–41	1929–31	1919–21	1939–41	1929–31	1919–21
Under 5	1.2	1.7	2.3	136,549	190,357	229,489
5–9	4.1	5.0	6.2	11,610	22,970	26,219
10–14	6.8	8.6	11.3	11,748	17,722	18,812
15–19	15.9	19.8	25.0	21,325	30,636	29,419
20–24	20.5	25.6	31.2	27,919	41,076	40,749
25–29	20.3	24.3	28.3	30,707	41,512	45,726
30–34	16.9	19.8	23.5	34,457	43,759	45,505
35–39	13.2	15.3	20.3	41,781	53,496	48,238
40–44	10.0	11.8	17.2	53,514	60,850	45,248
45–49	7.4	8.9	13.5	71,381	70,784	49,935
50–54	5.5	6.5	9.8	91,990	82,678	52,218
55–59	4.0	4.7	7.2	107,442	90,668	58,835
60–64	2.9	3.4	5.3	125,220	105,032	69,657
65–69	2.1	2.6	3.8	147,100	115,385	73,158
70–74	1.4	1.8	2.5	153,243	122,058	75,679
75 and over	.6	.8	1.1	333,643	243,849	161,138
All ages	4.3	6.3	9.0	1,400,936	1,334,757	1,074,726

The changes that occurred in tuberculosis relative to total mortality by age are shown in figure 11 and table 12, which present the percentages of tuberculosis deaths to deaths from all causes by age in the three decades, 1919–21, 1929–31, and 1939–41. The curve for each decade lies entirely below that of the preceding one, indicating that for each age group tuberculosis formed a smaller proportion of total deaths in 1940 than in 1930 and that of the latter in turn was smaller than that for 1920. For example, at ages 20–24 nearly one-third of all deaths were due to tuberculosis in the first of the three decades but only one-fourth of the deaths in 1930 and only one-fifth of the deaths at these ages in 1940 were due to tuberculosis. The relative decrease was greatest for the youngest age groups and least for the age group 25–34. It is also worthy of note that the curve for the latest decade is not as sharply peaked at ages 20–24 as are the curves for the earlier decades.

It is of interest to consider what the improvements in the age-specific mortality rates mean in actual number of lives saved annually. For example, if the age-specific mortality rates of 1920 were operative today, there would have been 156,520 deaths from tuberculosis in 1940, compared with the actual number of 60,428, a saving of close to 100,000 lives annually.

SUMMARY

This paper presents analyses of the most recent material available on tuberculosis mortality in the United States, and records the following findings:

The average annual number of deaths from tuberculosis (all forms) in the period 1939–41 was 60,429 (45.9 per 100,000 of the enumerated

population). Mortality from tuberculosis was 41 percent higher among males than among females, and three and one-half times as high among nonwhites as among whites.

Death rates from tuberculosis (all forms) are higher in the older age groups than in the younger. Among children and young adults the rates are higher for females than for males but in the older groups the rates are much higher for males. Among whites the rates increase with age but among nonwhites the highest rates occur during the most productive age periods.

Nearly one-half of all tuberculosis deaths occur at ages 20–44. From early adulthood to age 35 tuberculosis is the leading cause of death. It is one of the first three causes of death at ages 15–49. For ages 20–34 one out of every six deaths among whites and one out of every three deaths among nonwhites is due to tuberculosis.

The death rate from tuberculosis (all forms) for males is higher among residents of larger cities than among residents of intermediate-sized cities and that of the latter in turn is much higher than the rate for residents of rural areas. For females the variation of the death rate by size of city is almost negligible.

The death rate for tuberculous meningitis decreases continuously with age, while that for pulmonary tuberculosis and for "other forms" of tuberculosis increases with age.

Twenty-three percent of the tuberculosis death certificates listed secondary causes. Diseases of the heart is the most common contributory cause. Syphilis is the most common cause to which tuberculosis is secondary.

Tuberculosis mortality has decreased continuously since the beginning of the century; the rate in 1941 was less than one-fourth that in 1900. The decrease has been relatively greater for females than for males, and for whites than for nonwhites.

Tuberculosis mortality has fallen at a more accelerated rate than mortality from all causes; in 1900 more than 11 percent of all deaths were due to tuberculosis, in 1940 the percentage was only 4.3. Tuberculosis was first in numerical importance as a cause of death at the beginning of the century and seventh in 1940.

Every age group shared in the reduction of the mortality rate, but not to the same degree. In general the percentage reduction was nearly twice as high in the younger groups as it was in the older ones. The relative decrease was higher for females than for males in the older groups but during the most fertile age period the percentage decrease was smaller for females than for males.

The improvement in age-specific mortality rates from 1920 to 1940 is equivalent to the saving of nearly 100,000 lives annually.

The curve representing tuberculosis mortality relative to total mortality (tuberculosis deaths as a percentage of deaths from all

causes) by age, sex, and race is presented. It is suggested that this index, the best available measure of changes in tuberculosis mortality, will serve as an indicator of the course of the disease, particularly in critical areas during wartime.

PREVALENCE OF COMMUNICABLE DISEASES IN THE UNITED STATES

August 15–September 11, 1943

The accompanying table summarizes the prevalence of nine important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State are published in the Public Health Reports under the section "Prevalence of disease." The table gives the number of cases of these diseases for the 4 weeks ended September 11, 1943, the number reported for the corresponding period in 1942, and the median number for the years 1938–42.

DISEASES ABOVE MEDIAN PREVALENCE

Poliomyelitis.—The number of cases of poliomyelitis rose from 1,686 during the 4 weeks ended August 14 to 3,482 during the 4 weeks ended September 11. The number of cases was more than 4 times that reported during the corresponding period in 1942 and more than 2 times the 1938–42 median. For the country as a whole the incidence is the highest reported for this period since 1935, when the reported cases totaled 3,625.

A comparison of geographic regions shows an increase over the median in each region except the South Atlantic and East South Central; the number of cases for the current period ranged from 1.4 times the median in the Middle Atlantic region to almost 12 times the median in the Pacific region. States that have reported the largest number of cases are: Illinois, 692; California, 520; Kansas, 279; Texas, 239; New York, 210; Connecticut, 155; Utah, 145; Oklahoma, 127; and Colorado, 96 cases. More than 70 percent of the cases occurred in these 9 States which are widely distributed over the whole country.

While the number of cases for the 4-week period was much larger than that for the preceding 4-week period, there was a decline during the last week of the current period in practically all of the States in which the disease has been most prevalent, as well as in other States that have had minor excesses. In preceding years the peak of this disease has usually been reached during this period of the year, so a further decline in the number of cases may normally be expected.

Influenza.—A total of 2,233 cases of influenza was reported during the current period, the number being about 15 percent above the 1942

incidence and more than 35 percent above the 1938–42 median for the corresponding period. The increase was largely due to a relatively large number of cases in the West South Central and Mountain regions. States reporting the largest numbers of cases were: Texas, 924; South Carolina, 541; Virginia, 212; and Arizona, 117 cases.

Measles.—The number of cases (4,429) of measles reported for the 4 weeks ended September 11 was approximately 60 percent above the 1938–42 median level. In the New England and East South Central regions the incidence was about normal, but all other regions reported excesses over the normal seasonal expectancy; the largest excess occurred in the East North Central region where the number of cases (1,497) was almost 3 times the median.

Number of reported cases of nine communicable diseases in the United States during the 4-week period August 15–September 11, 1943, the number for the corresponding period in 1942, and the median number of cases reported for the corresponding period, 1938–42

Division	Current period	1942	5-year median	Current period	1942	5-year median	Current period	1942	5-year median
	Diphtheria			Influenza [1]			Measles [2]		
United States	957	951	964	2,283	1,974	1,658	4,429	2,605	2,819
New England	12	12	14	3	13	4	343	423	349
Middle Atlantic	56	51	68	11	32	29	971	381	684
East North Central	113	114	114	84	95	95	1,497	456	545
West North Central	86	57	90	39	34	35	267	193	184
South Atlantic	265	344	344	816	859	831	337	139	191
East South Central	152	135	187	69	102	102	115	83	118
West South Central	128	150	154	986	563	513	219	106	121
Mountain	48	40	52	154	204	107	228	217	184
Pacific	97	48	48	71	72	67	452	607	380
	Meningococcus meningitis			Poliomyelitis [3]			Scarlet fever		
United States	650	187	122	3,482	847	1,648	3,255	2,740	2,740
New England	69	16	7	265	33	30	329	298	161
Middle Atlantic	169	55	23	258	181	181	423	421	453
East North Central	127	19	18	907	261	336	730	652	766
West North Central	46	14	11	570	106	111	283	283	265
South Atlantic	83	42	23	35	74	130	482	367	329
East South Central	32	15	15	75	80	80	217	350	269
West South Central	29	9	9	392	49	49	105	113	126
Mountain	17	4	4	306	18	27	385	89	114
Pacific	78	13	6	674	45	57	301	167	223
	Smallpox			Typhoid and paratyphoid fever			Whooping cough [2]		
United States	11	16	36	759	887	1,655	11,056	11,672	11,672
New England	0	0	0	39	34	35	503	1,233	765
Middle Atlantic	0	0	0	94	130	148	2,140	2,988	2,988
East North Central	8	3	10	93	102	158	3,260	4,025	3,793
West North Central	0	4	13	55	59	88	904	519	536
South Atlantic	0	1	2	150	188	345	1,725	939	1,297
East South Central	2	1	1	129	142	256	407	408	442
West South Central	1	3	3	149	168	434	692	527	631
Mountain	0	3	6	20	43	51	554	330	406
Pacific	0	1	2	30	21	52	871	703	740

[1] Mississippi, New York, and Pennsylvania excluded; New York City included.
[2] Mississippi excluded.
[3] *Correction:* For the 4 weeks ended July 17 there were 867 cases of poliomyelitis reported, distributed as follows: New England, 10; Middle Atlantic, 33; East North Central, 14; West North Central, 29; South Atlantic, 11; East South Central, 15; West South Central, 443; Mountain, 29, and Pacific, 283. The number of cases was about 3.7 times the 1942 figure for this period and almost 3 times the 1938–42 median.

Meningococcus meningitis.—The number of cases of meningococcus meningitis dropped from 826 during the preceding 4-week period to 650 during the current 4 weeks. The incidence was, however, more than 3 times that recorded for the corresponding period in 1942 and more than 5 times the 1938–42 median. Each region of the country has contributed to the relatively high incidence of this disease. The largest excess over the median was reported from the Pacific region and the smallest from the East South Central region. For the country as a whole the incidence still continues to maintain the highest level in the 15 years for which these data are available.

Scarlet fever.—During the current 4-week period there were 3;255 cases of scarlet fever reported, an increase of approximately 20 percent over the 1938–42 median incidence for this period. The Middle Atlantic, East North Central, and South Central regions reported fewer cases than have normally occurred in those regions, but in the other 5 regions the incidence was relatively high.

DISEASES BELOW MEDIAN PREVALENCE

Diphtheria.—For the 4 weeks ended September 11 there were 957 cases of diphtheria reported, as compared with 951 for the corresponding period in 1942 and a 1938–42 median of 964 cases. In the Pacific region the number of cases (97) was about twice the median, but in all other regions the number of cases either closely approximated the median or fell considerably below it.

Smallpox.—The incidence of smallpox continued at a relatively low level, only 11 cases being reported for the current period, which was less than one-third of the 1938–42 median. Seven of the cases were reported from Illinois. For the country as a whole the incidence is the lowest on record for this period.

Typhoid and paratyphoid fever.—For the current period the number of reported cases of this disease totaled 759, which was about 85 percent of the number reported for the corresponding period in 1942 and less than 50 percent of the 1938–42 median. In the New England region the incidence stood at about the normal seasonal level, but in all other regions the incidence was comparatively low.

Whooping cough.—The number of cases (11,056) of whooping cough reported during the current period was only slightly below the seasonal expectancy. Of the nine geographic regions, five reported an increase over the 1938–42 median and in four regions the number of cases was below the normal seasonal expectancy. The largest increase was reported from the South Atlantic region while the most significant decreases were reported from the Middle Atlantic and East North Central regions.

MORTALITY, ALL CAUSES

For the four weeks ended September 11 there were approximately 30,000 deaths reported by the group of large cities to the Bureau of the Census. The number represented an increase of almost 5 percent over the average number of deaths for the corresponding weeks in the 3 preceding years.

The monthly death rate from all causes among persons insured in the industrial department of the Metropolitan Life Insurance Co. has been above the corresponding month of the preceding year for every month from October 1942 to July 1943, the latest available data. The average of the excesses in the rates for these 10 months over the corresponding months of the preceding year was about 9 percent.

DEATHS DURING WEEK ENDED SEPTEMBER 18, 1943

[From the Weekly Mortality Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended Sept. 18, 1943	Corresponding week, 1942
Data from 90 large cities of the United States:		
Total deaths	7,927	7,831
Average for 3 prior years	7,628	
Total deaths, first 37 weeks of year	338,980	311,115
Deaths under 1 year of age	548	620
Average for 3 prior years	556	
Deaths under 1 year of age, first 37 weeks of year	24,249	21,118
Data from industrial insurance companies:		
Policies in force	65,822,142	65,022,250
Number of death claims	10,197	10,201
Death claims per 1,000 policies in force, annual rate	8.1	8.2
Death claims per 1,000 policies, first 37 weeks of year, annual rate	9.8	9.2

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED SEPTEMBER 25, 1943

Summary

The incidence of poliomyelitis declined from a total of 1,020 cases to 818, the smallest number reported in the past 5 weeks. Decreases were reported in all geographic areas, although some States recorded increases. The accumulated total for the first 38 weeks of the year is 8,630. The 5-year (1938–42) medians corresponding with the current and cumulative figures are, respectively, 484 and 4,430. States reporting 18 or more cases currently (last week's figures in parentheses) are as follows: *Increases*—Wisconsin 22 (18), Minnesota 23 (10), Utah 42 (41), Oregon 18 (14); *decreases*—Massachusetts 29 (35), Connecticut 29 (32), New York 57 (65), Illinois 140 (208), Michigan 28 (29), Kansas 52 (77), Oklahoma 18 (26), Texas 41 (57), Colorado 28 (35), Washington 22 (27), and California 117 (150). Rhode Island reported 20 cases, the same number as for the preceding week.

A total of 178 cases of meningitis was reported, as compared with 135 last week and a 5-year median of 31. States reporting more than 5 cases (last week's figures in parentheses) are as follows: Massachusetts 16 (10), New York 17 (12), Pennsylvania 15 (10), Illinois 19 (8), Michigan 8 (9), Maryland 8 (1), Washington 8 (2), Oregon 9 (3), and California 14 (9).

Cumulative figures for the first 38 weeks of the year for other diseases included in the table (figures for the corresponding period of last year in parentheses) are as follows: Anthrax 48 (63), diphtheria 8,671 (8,926), dysentery, all forms, 17,033 (15,450), encephalitis, infectious, 540 (420), influenza 84,920 (83,811), leprosy 19 (35), measles 541,518 (469,401), Rocky Mountain spotted fever 410 (427), scarlet fever 102,603 (93,331), smallpox 625 (639), tularemia 651 (709), typhoid and paratyphoid fever 4,184 (5,137), typhus fever, endemic, 2,946 (2,511), whooping cough 143,326 (136,936).

A total of 8,300 deaths was recorded in 90 large cities of the United States, as compared with 7,927 last week and a 3-year (1940–42) average of 7,563. The cumulative total for the first 38 weeks of the year is 347,280, as compared with 318,842 for the corresponding period of last year.

Telegraphic morbidity reports from State health officers for the week ended September 25, 1943, and comparison with corresponding week of 1942 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none were reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended		Median 1938–42	Week ended		Median 1938–42	Week ended		Median 1938–42	Week ended		Median 1938–42
	Sept. 25, 1943	Sept. 26, 1942		Sept. 25, 1943	Sept. 26, 1942		Sept. 25, 1943	Sept. 26, 1942		Sept. 25, 1943	Sept. 26, 1942	
NEW ENGLAND												
Maine	0	0	0	1	------	------	20	3	10	3	1	0
New Hampshire	1	0	0	------	------	------	5	0	0	1	1	0
Vermont	0	0	0	------	------	------	2	11	1	0	0	0
Massachusetts	4	4	4	------	------	------	31	35	27	16	3	2
Rhode Island	0	5	0	------	------	------	18	1	0	2	0	0
Connecticut	1	2	1	3	5	1	10	5	5	5	0	0
MIDDLE ATLANTIC												
New York	10	5	7	13	16	13	43	30	48	17	4	3
New Jersey	1	0	3	1	3	3	34	44	26	5	1	0
Pennsylvania	8	7	11	2	------	------	25	24	24	15	1	3
EAST NORTH CENTRAL												
Ohio	5	3	8	4	3	3	27	19	6	5	1	0
Indiana	11	9	13	4	16	15	10	10	3	2	0	1
Illinois	6	15	16	1	5	5	19	19	19	19	2	1
Michigan [2]	6	0	1	------	2	2	110	18	22	8	2	0
Wisconsin	2	0	0	12	14	28	82	25	34	2	0	0
WEST NORTH CENTRAL												
Minnesota	8	2	4	------	------	------	36	6	9	3	1	0
Iowa	11	6	2	1	------	------	8	10	5	2	0	0
Missouri	3	9	11	2	1	1	0	8	6	3	1	1
North Dakota	2	0	1	------	1	1	41	0	2	0	0	0
South Dakota	1	4	4	------	------	------	0	0	1	0	0	0
Nebraska	5	3	4	3	2	------	1	15	3	0	1	1
Kansas	3	1	3	1	4	1	3	1	4	1	1	1
SOUTH ATLANTIC												
Delaware	0	1	0	------	------	------	1	0	2	2	0	0
Maryland [2]	4	3	3	------	4	2	7	2	5	8	2	1
District of Columbia	0	1	1	------	------	------	0	1	1	1	0	0
Virginia	12	16	23	63	74	58	11	3	6	2	3	2
West Virginia	6	9	9	3	1	2	8	2	2	1	2	1
North Carolina	37	47	53	------	------	------	7	4	12	4	0	0
South Carolina	16	27	36	146	210	157	8	5	3	1	1	1
Georgia	26	51	41	6	2	8	2	6	6	0	0	0
Florida	6	7	8	5	1	1	2	2	2	0	0	0
EAST SOUTH CENTRAL												
Kentucky	10	11	14	1	2	2	1	4	4	2	0	0
Tennessee	25	13	15	16	12	17	3	2	10	4	0	2
Alabama	18	28	28	23	15	20	4	11	7	4	2	0
Mississippi [2]	5	7	15	------	------	------	------	------	------	0	1	1
WEST SOUTH CENTRAL												
Arkansas	4	17	15	12	8	9	2	0	2	0	0	0
Louisiana	5	10	10	1	1	2	4	5	3	1	1	0
Oklahoma	5	8	10	17	9	10	0	2	2	1	1	0
Texas	25	36	33	442	231	102	15	9	9	4	1	0
MOUNTAIN												
Montana	5	1	1	------	1	2	17	3	5	0	0	0
Idaho	0	0	0	------	------	------	4	5	4	0	0	0
Wyoming	0	0	2	2	30	------	12	7	2	0	0	0
Colorado	5	1	6	50	24	8	13	5	6	2	0	0
New Mexico	1	1	1	------	2	------	3	1	1	0	0	0
Arizona	3	1	1	28	25	30	2	8	8	1	0	0
Utah [2]	0	0	0	------	------	3	5	36	2	0	0	0
Nevada	0	0	------	------	------	------	0	0	------	0	1	------
PACIFIC												
Washington	5	1	2	1	2	------	9	42	11	8	1	1
Oregon	3	0	2	3	2	6	11	26	18	9	0	0
California	12	13	13	12	28	11	35	49	51	14	2	1
Total	326	385	395	869	746	674	711	524	626	178	39	31
38 weeks	8,638	8,926	10,043	84,920	83,811	153,627	541,518	469,401	469,401	14,331	2,623	1,575

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended September 25, 1943, and comparison with corresponding week of 1942 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever [1]		
	Week ended—		Median 1938–42	Week ended—		Median 1938–42	Week ended—		Median 1938–42	Week ended—		Median 1938–42
	Sept. 25, 1943	Sept. 26, 1942		Sept. 25, 1943	Sept. 26, 1942		Sept. 25, 1943	Sept. 26, 1942		Sept. 25, 1943	Sept. 26, 1942	
NEW ENGLAND												
Maine	1	2	0	10	7	2	0	0	0	1	0	0
New Hampshire	2	0	0	2	5	3	0	0	0	0	0	0
Vermont	4	2	2	0	3	3	0	0	0	0	0	0
Massachusetts	29	1	1	97	75	40	0	0	0	11	13	1
Rhode Island	20	0	0	4	4	1	0	0	0	0	0	0
Connecticut	29	4	4	11	7	11	0	0	0	2	1	1
MIDDLE ATLANTIC												
New York	57	22	22	109	85	74	0	0	0	7	11	18
New Jersey	12	17	17	19	33	26	0	0	0	2	1	5
Pennsylvania	14	8	11	85	72	87	0	0	0	18	9	17
EAST NORTH CENTRAL												
Ohio	7	13	13	113	79	79	1	0	0	8	9	12
Indiana	10	3	3	32	28	28	0	1	1	5	6	6
Illinois	140	50	25	59	61	93	3	0	0	5	12	16
Michigan [2]	28	13	20	58	44	84	0	0	0	9	0	10
Wisconsin	22	2	6	73	49	49	1	0	0	1	4	2
WEST NORTH CENTRAL												
Minnesota	23	5	16	29	26	32	0	0	1	1	0	4
Iowa	16	3	3	51	34	28	0	0	1	1	3	3
Missouri	10	1	3	29	12	18	0	0	0	4	14	13
North Dakota	1	2	0	3	4	6	0	0	0	0	0	0
South Dakota	2	0	0	14	11	9	0	0	0	0	0	0
Nebraska	10	10	1	10	7	7	0	0	0	0	0	1
Kansas	52	11	5	64	12	35	0	0	0	0	0	6
SOUTH ATLANTIC												
Delaware	2	1	0	1	1	4	0	0	0	0	1	1
Maryland [2]	3	2	2	16	14	14	0	0	0	4	3	6
District of Columbia	1	1	2	5	14	5	0	0	0	2	1	1
Virginia	2	4	4	28	38	20	0	0	0	11	10	11
West Virginia	3	6	2	60	37	34	0	0	0	2	9	11
North Carolina	1	1	3	90	62	62	0	0	0	4	6	10
South Carolina	0	2	2	6	8	8	0	0	0	4	5	11
Georgia	0	1	1	19	37	23	0	0	0	3	12	15
Florida	2	2	2	4	2	3	0	0	0	1	1	1
EAST SOUTH CENTRAL												
Kentucky	5	2	7	19	28	28	0	1	0	9	4	18
Tennessee	0	6	3	31	45	44	0	0	0	9	11	16
Alabama	1	3	3	18	36	26	0	0	0	4	4	8
Mississippi [2]	0	0	1	3	3	5	0	0	0	3	6	6
WEST SOUTH CENTRAL												
Arkansas	4	5	1	3	7	7	0	2	0	2	11	18
Louisiana	4	1	1	5	3	4	0	0	0	7	9	17
Oklahoma	18	0	2	5	12	9	0	0	0	7	7	11
Texas	41	1	1	20	17	17	1	0	0	8	17	43
MOUNTAIN												
Montana	2	0	1	5	5	8	0	0	0	0	0	1
Idaho	4	0	0	0	5	5	0	0	0	2	0	2
Wyoming	1	0	0	4	1	1	0	0	0	0	1	1
Colorado	28	4	4	10	5	13	0	1	1	6	8	7
New Mexico	3	2	1	3	3	4	0	0	0	4	1	4
Arizona	4	1	1	2	0	2	0	0	0	3	0	1
Utah [2]	42	0	2	12	4	2	0	0	0	1	0	1
Nevada	1	0	------	0	0	------	0	0	------	0	0	------
PACIFIC												
Washington	22	2	2	27	19	11	0	0	0	1	6	6
Oregon	18	0	3	16	5	6	0	0	0	0	1	1
California	117	4	9	79	41	66	0	0	0	4	1	8
Total	818	220	484	1,363	1,110	1,216	6	5	9	176	218	422
38 weeks	8,630	2,618	4,430	102,603	95,331	121,178	625	639	2,011	4,184	5,137	7,058

See footnotes at end of table.

Telegraphic morbidity reports from State health officers for the week ended September 25, 1943, and comparison with corresponding week of 1942 and 5-year median—Con.

Division and State	Whooping cough			Week ended Sept. 25, 1943								
	Week ended		Median 1938–42	Anthrax	Dysentery			Encephalitis, infectious	Leprosy	Rocky Mt. spotted fever	Tularemia	Typhus fever
	Sept. 25, 1943	Sept. 26, 1942			Amebic	Bacillary	Unspecified					
NEW ENGLAND												
Maine	14	50	15	0	0	0	0	0	0	0	0	0
New Hampshire	2	5	3	0	0	0	0	0	0	0	0	0
Vermont	17	26	16	0	0	0	0	0	0	0	0	0
Massachusetts	64	194	123	0	0	3	0	2	0	0	0	0
Rhode Island	129	32	13	0	0	0	0	0	0	0	0	0
Connecticut	25	55	54	0	2	4	0	0	0	0	0	0
MIDDLE ATLANTIC												
New York	266	351	351	0	1	177	0	0	0	0	1	1
New Jersey	120	168	153	0	0	0	0	0	0	0	0	0
Pennsylvania	133	205	261	1	0	1	0	1	0	0	0	0
EAST NORTH CENTRAL												
Ohio	178	220	220	0	0	0	0	0	0	0	0	0
Indiana	51	18	18	0	2	0	0	0	0	0	1	0
Illinois	146	226	214	0	2	2	0	0	0	0	0	0
Michigan [2]	191	311	291	0	0	15	0	1	0	0	0	0
Wisconsin	204	199	199	0	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL												
Minnesota	36	49	49	0	2	0	0	0	0	0	0	0
Iowa	16	37	21	0	0	0	0	0	0	0	0	0
Missouri	16	6	25	0	0	0	2	0	0	0	0	0
North Dakota	31	15	10	0	0	0	0	0	0	0	0	0
South Dakota	5	0	3	0	0	0	0	0	0	0	0	0
Nebraska	2	8	8	0	0	0	0	0	0	0	0	0
Kansas	10	33	33	0	0	0	0	0	0	0	0	0
SOUTH ATLANTIC												
Delaware	2	2	2	0	0	0	0	0	0	0	0	0
Maryland [3]	69	70	69	0	0	0	4	0	0	1	0	0
District of Columbia	19	17	13	0	0	0	0	0	0	0	0	0
Virginia	54	34	34	0	0	0	150	0	0	0	1	1
West Virginia	22	6	24	0	0	0	0	0	0	1	0	0
North Carolina	50	45	60	0	0	0	0	0	0	0	1	2
South Carolina	52	37	37	0	0	4	0	0	0	0	0	8
Georgia	7	16	10	0	0	5	0	0	0	1	1	45
Florida	16	6	6	0	2	0	1	0	0	0	0	6
EAST SOUTH CENTRAL												
Kentucky	31	40	58	0	0	13	0	0	0	0	0	0
Tennessee	36	13	24	0	0	0	5	0	0	1	1	4
Alabama	24	33	14	0	0	0	0	0	0	0	0	26
Mississippi [3]	------	------	------	0	0	0	0	0	0	0	1	3
WEST SOUTH CENTRAL												
Arkansas	13	10	10	0	10	12	0	0	0	0	1	1
Louisiana	13	0	5	0	2	2	0	0	0	0	0	14
Oklahoma	9	2	3	0	0	0	0	0	0	0	0	0
Texas	156	68	74	0	20	184	0	0	0	0	0	39
MOUNTAIN												
Montana	36	23	12	0	0	0	0	0	0	0	0	0
Idaho	2	10	3	0	0	0	0	0	0	0	0	0
Wyoming	6	28	24	0	0	0	0	0	0	0	[4] 0	0
Colorado	96	35	35	0	0	1	0	3	0	0	0	0
New Mexico	9	8	18	0	1	11	24	0	0	0	0	0
Arizona	10	15	13	0	0	0	27	1	0	0	0	0
Utah [3]	31	21	25	0	0	0	0	1	0	0	1	0
Nevada	0	0	------	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington	51	17	19	0	0	0	0	0	0	0	0	0
Oregon	42	8	8	0	0	0	0	0	0	0	0	0
California	122	170	175	0	2	1	0	6	0	0	0	0
Total	2,634	2,942	2,942	1	46	435	213	15	0	4	49	150
38 weeks	145,326	136,936	139,425	48	1,582	12,414	3,037	540	19	410	651	2,946
38 weeks, 1942	------	------	------	63	824	9,354	5,272	420	35	427	709	2,511

[1] New York City only.
[2] Period ended earlier than Saturday.
[3] Including paratyphoid fever cases reported separately as follows: Maine, 1; Massachusetts, 11; Connecticut, 1; New York, 1; Michigan, 6; Iowa, 1; New Mexico, 1; California, 1.
[4] Exclusive of delayed reports (included only in cumulative totals) of 6 cases in Wyoming.

WEEKLY REPORTS FROM CITIES

City reports for week ended Sept. 11, 1948

This table lists the reports from 86 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENGLAND												
Maine:												
Portland	0	0	------	0	2	1	1	3	2	0	0	3
New Hampshire:												
Concord	0	0	------	0	0	0	0	0	0	0	0	0
Vermont:												
Barre	0	0	------	0	0	0	0	0	0	0	0	0
Massachusetts:												
Boston	0	0	------	0	4	1	8	8	16	0	0	24
Fall River	1	0	------	0	0	1	0	2	1	0	0	0
Springfield	0	0	------	0	1	1	1	0	3	0	0	2
Worcester	0	0	------	0	0	0	4	0	7	0	0	3
Rhode Island:												
Providence	0	0	------	0	8	0	1	5	0	0	1	37
Connecticut:												
Bridgeport	0	0	1	1	0	1	1	2	0	0	0	0
Hartford	0	0	1	0	0	1	0	1	0	0	0	5
New Haven	0	0	------	0	0	0	0	10	3	0	0	8
MIDDLE ATLANTIC												
New York:												
Buffalo	3	0	------	0	1	1	2	5	3	0	0	4
New York	6	2	------	0	35	14	41	36	16	0	1	84
Rochester	0	0	------	0	0	1	6	2	4	0	1	7
Syracuse	0	0	------	0	0	0	2	0	1	0	0	17
New Jersey:												
Camden	1	0	1	1	1	0	1	0	1	0	0	0
Newark	0	0	------	0	5	2	0	0	1	0	0	36
Trenton	0	0	------	0	0	0	0	0	1	0	0	1
Pennsylvania:												
Philadelphia	1	0	------	0	2	5	13	2	9	0	2	43
Pittsburgh	1	0	------	0	6	2	8	0	9	0	1	13
Reading	0	0	------	0	0	0	0	0	0	0	0	3
EAST NORTH CENTRAL												
Ohio:												
Cincinnati	2	0	------	1	0	1	1	1	9	0	0	9
Cleveland	0	0	1	0	1	1	6	2	13	0	0	36
Columbus	0	0	------	0	0	0	2	0	2	0	0	7
Indiana:												
Fort Wayne	0	0	------	0	0	0	1	0	0	0	0	0
Indianapolis	0	0	------	0	0	0	6	0	2	0	0	11
South Bend	0	0	------	0	4	0	0	0	3	0	0	0
Terre Haute	0	0	------	0	0	0	0	0	0	0	0	0
Illinois:												
Chicago	1	0	1	1	5	3	8	124	16	0	0	74
Springfield	0	1	------	0	0	0	0	0	1	0	0	0
Michigan:												
Detroit	2	0	------	1	2	2	10	2	11	0	3	27
Flint	0	0	------	0	0	0	0	4	0	0	0	10
Grand Rapids	0	0	------	0	2	0	0	2	1	0	0	10
Wisconsin:												
Kenosha	0	0	------	0	0	0	0	0	0	0	0	0
Milwaukee	0	0	------	0	2	0	0	8	14	0	0	54
Racine	0	0	------	0	1	0	0	0	0	0	0	11
Superior	0	0	------	0	17	0	0	0	1	0	0	0
WEST NORTH CENTRAL												
Minnesota:												
Duluth	0	0	------	0	0	0	1	1	2	0	0	14
Minneapolis	1	0	------	0	2	1	1	6	7	0	0	2
St. Paul	0	0	------	0	1	0	1	3	4	0	0	18
Missouri:												
Kansas City	1	0	------	0	0	0	9	5	1	0	0	1
St. Louis	1	0	------	9	1	4	6	2	1	0	3	11

City reports for week ended Sept. 11, 1943—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
WEST NORTH CENTRAL—continued												
Nebraska:												
Omaha	0	0	------	0	0	0	3	16	6	0	0	0
Kansas:												
Topeka	0	0	------	0	0	0	0	1	0	0	0	0
Wichita	0	0	------	0	0	0	2	2	1	0	0	1
SOUTH ATLANTIC												
Delaware:												
Wilmington	0	0	------	0	3	0	1	1	0	0	0	1
Maryland:												
Baltimore	1	0	------	0	1	0	3	0	4	0	0	56
Cumberland	0	0	------	0	0	0	0	0	1	0	0	0
Frederick	0	0	------	0	0	0	0	0	0	0	0	0
District of Columbia:												
Washington	0	0	1	1	4	2	1	2	1	0	1	9
Virginia:												
Lynchburg	1	0	------	0	6	0	0	0	0	0	0	11
Richmond	0	0	------	0	0	0	0	0	1	0	2	5
Roanoke	2	0	------	0	0	0	0	0	0	0	2	0
West Virginia:												
Charleston	0	0	------	0	0	0	0	0	2	0	0	1
Wheeling	0	0	------	0	0	1	1	0	0	0	0	5
North Carolina:												
Winston-Salem	0	0	------	0	0	0	1	0	1	0	0	0
South Carolina:												
Charleston	0	0	------	0	1	0	0	0	0	0	0	0
Georgia:												
Atlanta	0	0	7	0	0	0	2	0	6	0	0	0
Brunswick	0	0	------	0	0	0	0	0	0	0	0	0
Savannah	0	0	------	0	0	0	2	0	1	0	0	0
Florida:												
Tampa	1	0	------	0	0	0	2	0	0	0	0	0
EAST SOUTH CENTRAL												
Tennessee:												
Memphis	0	0	------	0	0	0	6	0	0	0	1	1
Nashville	1	0	------	1	0	1	3	0	0	0	1	2
Alabama:												
Birmingham	0	0	------	0	0	1	0	0	1	0	0	0
Mobile	0	0	------	0	0	0	1	0	0	0	0	0
WEST SOUTH CENTRAL												
Arkansas:												
Little Rock	1	0	------	0	0	1	5	0	0	0	0	0
Louisiana:												
New Orleans	0	0	5	0	1	2	6	3	0	0	6	1
Shreveport	0	0	------	0	0	0	0	0	0	0	0	0
Texas:												
Dallas	1	0	------	0	0	0	3	1	1	0	0	0
Galveston	1	0	------	0	0	0	1	2	0	0	0	0
Houston	0	0	------	0	3	0	7	9	2	0	0	0
San Antonio	0	0	1	0	0	0	3	0	0	0	0	0
MOUNTAIN												
Montana:												
Billings	1	0	------	0	0	0	0	0	0	0	0	0
Great Falls	0	0	------	0	4	0	0	0	0	0	0	3
Helena	0	0	------	0	0	0	0	0	0	0	0	0
Missoula	0	0	------	0	0	0	0	0	0	0	0	1
Idaho:												
Boise	0	0	------	0	0	0	0	0	0	0	1	0
Colorado:												
Denver	10	0	------	0	0	1	3	2	2	0	0	25
Pueblo	1	0	------	0	1	0	0	6	1	0	0	9
Utah:												
Salt Lake City	0	0	------	0	1	0	0	9	1	0	0	12

City reports for week ended Sept. 11, 1943—Continued

	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle	0	0	------	0	4	0	1	6	4	0	0	10
Spokane	0	0	------	0	2	0	0	1	1	0	0	3
Tacoma	0	0	------	0	0	0	1	0	1	0	0	4
California:												
Los Angeles	1	0	2	2	7	2	1	22	4	0	0	9
Sacramento	0	0	------	0	0	0	2	3	0	0	0	0
San Francisco	0	0	------	0	2	1	7	3	5	0	1	8
Total	43	3	21	9	143	55	209	325	212	0	26	762
Corresponding week, 1942	46	3	40	11	89	15	183	63	233	0	33	1,019
Average, 1938–42	58	------	39	[1] 8	[2] 135	------	[1] 215	------	235	1	51	1,149

Dysentery, amebic.—Cases: Boston, 1; New York, 4; St. Louis, 1; Baltimore, 1; San Francisco, 1.
Dysentery, bacillary.—Cases: New Haven, 5; Buffalo, 5; New York, 2; Springfield, Ill., 1; Detroit, 7; St. Louis, 2; Baltimore, 2; Richmond, 1; Charleston, S. C., 18; Los Angeles, 1.
Dysentery, unspecified.—Cases: Baltimore, 9; Richmond, 6; San Antonio, 1.
Rocky Mountain spotted fever.—Case: Lynchburg, 1.
Typhus fever.—Cases: Charleston, S. C., 2; Atlanta, 3; Savannah, 6; Tampa, 3; Memphis, 1; Nashville, 3; Birmingham, 1; New Orleans, 5; Dallas, 3; Houston, 1.

[1] 3-year average, 1940–42.
[2] 5-year median.

Rates (annual basis) per 100,000 population, by geographic groups, for the 86 cities in the preceding table (estimated population, 1942, 54,581,800)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Poliomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England	2.5	0.0	5.0	2.5	37.3	14.9	39.8	77.0	79.5	0.0	2.5	204
Middle Atlantic	5.4	0.9	0.4	0.4	22.3	11.1	32.6	20.1	20.1	0.0	2.2	93
East North Central	2.9	0.6	1.2	1.8	19.9	4.1	19.9	83.5	42.6	0.0	1.8	145
West North Central	6.1	0.0	0.0	0.0	8.1	10.1	46.7	73.1	44.6	0.0	4.1	95
South Atlantic	8.7	0.0	13.9	1.7	26.0	5.2	22.6	5.2	29.5	0.0	8.7	153
East South Central	5.9	0.0	0.0	5.9	0.0	11.9	59.4	0.0	5.9	0.0	11.9	18
West South Central	8.8	0.0	17.6	0.0	11.7	8.8	73.3	44.0	8.8	0.0	17.6	3
Mountain	96.5	0.0	0.0	0.0	48.2	8.0	24.1	136.7	32.2	0.0	8.0	402
Pacific	1.7	0.0	3.5	3.5	26.2	5.2	21.0	61.2	26.2	0.0	1.7	59
Total	6.5	0.5	3.2	1.4	21.6	8.3	31.5	49.0	32.0	0.0	3.9	115

PLAGUE INFECTION IN CALIFORNIA AND MONTANA

Plague infection has been reported proved in pools of fleas and ticks from ground squirrels (*C. beecheyi*, with two exceptions) and prairie dogs collected in California and Montana, as follows:

CALIFORNIA

Kern County.—July 15, in a pool of 136 fleas from 6 ground squirrels taken on a ranch 7 miles northwest of Tehachapi; June 28, 2 specimens, pooled, consisting of 77 fleas from 10 ground squirrels, and 17 fleas from 2 ground squirrels, taken from two ranches approximately 3 miles northwest of Tehachapi.

Kings County.—July 25, 200 fleas from 10 ground squirrels taken 6 miles east and 4 miles south of Hanford.

Mono County.—July 14, 108 fleas from 18 ground squirrels, *C. beldingi*, taken 1 mile east of June Lake.

Monterey County.—Specimens collected on the dates given were taken in an area 10 to 13 miles south and 12 to 20 miles east of Monterey, as follows: July 1, 200 fleas from 35 ground squirrels and 175 fleas from 35 ground squirrels; July 9, 175 fleas from 33 ground squirrels; July 13, 2 lots, proved separately, each of 135 fleas from 16 ground squirrels; July 14, 140 fleas from 33 ground squirrels; July 19, 12 ticks from 33 ground squirrels, and 7 ticks from 12 ground squirrels; July 20, 160 fleas from 14 ground squirrels; July 22, 200 fleas from 19 ground squirrels, and 27 ticks from 19 ground squirrels; July 31, 200 fleas from 19 ground squirrels.

Nevada County.—July 5, 200 fleas from 18 ground squirrels.

Siskiyou County.—July 13, 201 fleas from 14 ground squirrels, *C. douglasii*, taken on a ranch 5 miles south and 3 miles east of Etna.

MONTANA

Custer County.—September 3, 296 fleas from 28 prairie dogs, *C. ludovicianus*, taken on a ranch 20 miles southeast of Miles City on U. S. Highway No. 212; September 4, 100 fleas from 30 prairie dogs, same species, taken from a ranch 27 miles southeast of Miles City.

TERRITORIES AND POSSESSIONS

Puerto Rico

Influenza.—Cases of influenza have been reported in Puerto Rico, as follows: Week ended July 16, 1943, 83; week ended July 23, 975; week ended August 6, 2,141. No report has been received from Puerto Rico for the week ended July 30.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended August 28, 1943.—During the week ended August 28, 1943, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		15		5	34	2	4	21	15	96
Diphtheria		9	2	19	3	5		1	2	41
Dysentery (bacillary)				6						6
German measles		1		1	6		1	2	4	15
Influenza			10		16				3	29
Measles		2		32	51	18	10	40	37	190
Meningitis, meningococcus					2		1		2	5
Mumps		13		2	49	12	3	18	18	115
Poliomyelitis			3	14	2	2		1		22
Scarlet fever	1	2	4	30	32	14	15	20	14	132
Tuberculosis (all forms)		8	3	184	27	18		10	11	261
Typhoid and paratyphoid fever			1	13	2					16
Undulant fever				3					1	4
Whooping cough		6		110	118	19	19	51	31	354

CUBA

Provinces—Notifiable diseases—4 weeks ended August 14, 1943.—During the 4 weeks ended August 14, 1943, cases of certain notifiable diseases were reported in the Provinces of Cuba as follows:

Disease	Pinar del Rio	Habana [1]	Matanzas	Santa Clara	Camaguey	Oriente	Total
Cancer	3		4	4		18	29
Diphtheria	1	46	3			1	51
Leprosy				1		1	2
Malaria	24	16	16	41	19	225	341
Measles		6	4	1		1	12
Poliomyelitis				2			2
Scarlet fever		1					1
Tuberculosis	17	32	17	42	65	49	222
Typhoid fever	15	75	17	191	24	64	386
Whooping cough	4			1			5

[1] Includes the city of Habana.

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual prevalence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during the current year. All reports of yellow fever are published currently.

A cumulative table showing the reported prevalence of these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

(Few reports are available from the invaded countries of Europe and other nations in war zones.)

Cholera

China.—A report dated August 26, 1943, states that cholera has appeared in epidemic form in Kweilin Province, where the number of deaths is increasing daily. From July 21 to August 5 there were 394 cases with 78 deaths reported with a mortality rate of 19.8 percent. It is said that the majority of the cases are among the poorer classes where the death rate is well over 50 percent. The epidemic has spread to Hengyang in southern Hunan Province and to many larger cities in Kwangsi Province.

Plague

Morocco (French).—For the month of July 1943, 7 cases of plague were reported in French Morocco.

Senegal.—Plague has been reported in Senegal and Dakar District as follows: For the period July 11–31, 1943, 10 cases were reported in Senegal and 1 case in Dakar District. For the period August 1–10, 1943, 1 case with 1 death was reported in Thies District, Senegal.

Smallpox

Guinea (French).—For the period August 1–10, 1943, 42 cases of smallpox with 9 deaths were reported in French Guinea.

Indochina.—For the period August 1–10, 1943, 39 cases of smallpox were reported in Indochina.

Iran.—For the period May 1 to June 11, 1943, 83 cases of smallpox were reported in Iran.

Sudan (French).—For the period July 11–31, 1943, 563 cases of smallpox were reported in French Sudan.

Turkey.—For the month of July 1943, 738 cases of smallpox (35 cases in Istanbul) were reported in Turkey.

Typhus Fever

Bulgaria.—For the period July 15 to August 18, 1943, 61 cases of typhus fever were reported in Bulgaria.

Ecuador.—For the period August 1–15, 1943, 9 cases of typhus fever with 3 deaths were reported in Ecuador.

Hungary.—For the 2 weeks ended September 4, 1943, 11 cases of typhus fever were reported in Hungary.

Iran.—For the period May 1 to June 11, 1943, 4,425 cases of typhus fever were reported in Iran, including 1,733 cases in Tehran.

S. 46 P9r Room SOCIAL SCIENCES

Morocco (French).—For the month of July 1943, 497 cases of typhus fever were reported in French Morocco.

Rumania.—For the period August 24 to September 7, 1943, 71 cases of typhus fever were reported in Rumania.

Slovakia.—For the week ended August 28, 1943, 6 cases of typhus fever were reported in Slovakia.

Turkey.—For the month of July 1943, 339 cases of typhus fever (130 in Istanbul) were reported in Turkey.

* * *

COURT DECISION ON PUBLIC HEALTH

Piggery—held nuisance—operation enjoined.—(Michigan Supreme Court; *Mitchell et al.* v. *Hines et al.*, 9 N.W.2d 547; decided May 18, 1943.) Because of offensive odors from a piggery an action was brought to enjoin the defendants from operating the same. The plaintiffs were owners of residential properties located in the general vicinity of the farm on which the piggery was located. It was shown that since 1935 garbage collected from nearby cities was fed to the pigs, the number of which ranged from about 200 in 1935 to about 400 in 1940–41. The practice was to feed the garbage to the pigs in an open field and later to plow under the unconsumed portion. From an adverse decree in the trial court the defendants appealed to the Supreme Court of Michigan.

The latter court said that the case was not one where newcomers had moved into an unpleasant neighborhood and sought to change such neighborhood. Rather it was one where the piggery was conducted unobjectionably on a small scale for some years and then offensive odors were created through either the increased size of the piggery or the condition of the fields because of the continued dumping of garbage thereon, or both. The court was of the view that there was a nuisance justifying the issuance of an injunction. It was pointed out that, although a court of equity "is reluctant to bar the operation of a lawful business and will not do so if a remedy may be applied to the nuisance incidental thereto," tests did not show any satisfactory means of carrying on a large-scale garbage-feeding piggery. "No method of feeding garbage to pigs on a commercial scale, as is here the case, in a manner that will not constitute a nuisance has been disclosed by the proof."

×